DIPHTHERIA NUMBER.

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The Times and Register.

Vol. XXIII, No. 22. NEW YORK AND PHILADELPHIA, NOVEMBER 28, 1891. Whole No. 690.

Original Articles.

ADDRESS ON DIPHTHERIA.[1]

BY O. W. BRAYMER, M.D., M.A.,
CAMDEN, N. J.

THE subject we have chosen for discussion to-day is of great importance to us as practitioners of medicine, both because of its fatality among children and adults, and especially because statistics show that it is increasing, both in quantity and severity, among our population. In the year 1890 at the Health Department, in the City of Camden, two hundred and seventeen cases were reported with fifty deaths. Up to November 1, 1891, that is during the first ten months of this year, there have been reported four hundred and eighty three cases, with one hundred and forty-two deaths; two hundred and sixty-six more cases than for the whole of 1890. And the death-rate is six per cent. higher this year than last, being in 1890 twenty-three per cent. and a fraction. While thus far in 1891 it has been twenty-nine per cent. and a greater fraction.

Now, since the sanitary surroundings do not seem to be at all improved, we must expect even more of the disease to fight against before the winter is very far advanced.

The cause of all this is undoubtedly due to improper drainage and surrounding hygienic conditions, particularly among the more filthy of our inhabitants.

The Loëffler bacillus is now, we believe, accepted by the great body of medical men and bacteriologists as the specific cause of this disease. Cases which have heretofore contradicted this view, must be accepted as ulcerated sore-throat, pseudo-diphtheria, or what might be better, let all such come under the head of diphtheroidal disease.

These are caused by various microbes, and have a tendency to remain local, seldom, if ever, giving any systemic effects or sequelæ.

We have in diphtheria a highly contagious disease, especially among children, which, whether it appears in the mild or more severe types, must always be dreaded, both because of its loathsomeness and fatality *per se*, and on account of the paralysis which may suddenly take place after the patient is apparently out of danger, and rapidly end his life.

It has been found, upon examination of membrane from the infected parts, that the specific bacillus does not extend through the entire thickness of the exudation; but the chemical products of these bacilli, or ptomains, when absorbed into the system, destroy the red blood corpuscles, and give rise to the grave constitutional disturbances, which are present in so many cases.

Therefore, it is concluded, that we have a primary local disease to treat, and we can readily see the prime necessity of early treatment in individuals supposed to be infected, and it is evident that early local antiseptic treatment of both the patient and all members of the household will be of the greatest benefit. This will keep parts liable to be infected comparatively impregnable to the assaults of the bacilli.

In the first place, when a deadly infection of this character appears in a community, the public should be put on their guard so that they may not run, without warning, into polluted places.

All houses containing infected persons ought to be placarded. This should be as compulsory as reporting the case to the Board of Health.

This is done in some of our large cities by fastening on the front door, or in the window, a card with let-

[1] Delivered before the Camden County Medical Society at its Ninety-first Semi-Annual Meeting, November 10, 1891.

ters large enough to be read from a distance, stating the name of the disease. These cards should be furnished by the Boards of Health, and a fine should be imposed if they are not hung out within a reasonable period of time, say three or four hours after the nature of the malady has been established; and if at any time there is doubt in the diagnosis, let the public have the benefit by warning them of the supposed danger within.

Boards of Health should be very prompt in looking into the sanitary conditions of all infected houses and communities, because delay in any case means the spread of sorrow, and, perhaps, death. All drains and cess-pools should be thoroughly disinfected; all houses should be fumigated at once with the fumes of burning sulphur, or with chlorine gas. This done, free ventilation must be established, and our patient isolated and kept in bed. The well members of the household must be put on a course of prophylactic treatment, to reduce the spread of the contagion to the minimum.

Stores and all places of business should always be closed when any person in the house is sick with this disease. This should be rigidly enforced by every health board. The evil from neglect of this has come to our notice during the past few months, where, in a family who kept a candy and notion store, patients died with diphtheria, and at all times the doors were open and children were allowed to go and come as they pleased. Several caught the contagion by this means.

Domestic animals, such as dogs and cats, should not be allowed in the house at all, as in many instances these have been known to contract the disease and carry it from place to place. And, indeed, fatal forms of diphtheria have been contracted from chickens, which, perhaps, had fed upon the refuse from some sick chamber.

Great care should be exercised in the disposition of all clothing and bedding from the sick-room. Certainly they should not be hung in the back yards to spread contagion among the neighborhood, unless they have been previously sterilized by thoroughly boiling or steaming.

Were these details properly looked after by the health authorities, many valuable lives could be saved.

In case of death, the body should be at once wrapped in antiseptic blankets and buried without delay. After death or recovery the sick-room, and everything within, should be subjected to sulphur fumes or chlorine gas; floors should be scrubbed, walls freshly repapered or whitewashed, and the woodwork repainted. In thorough cleanliness is found the only safety.

In the way of treatment for out patient: First, isolate him in a well-ventilated room, free from all carpets, draperies, and superfluous furniture.

The next in order is to look out for a competent nurse. If the means of the family will not allow of a regular or trained nurse, certain members — in whose judgment the physician can rely—should be designated to look after all the patient's wants. This establishes order in giving medicines and nourishment, and also keeps a part of the family, to some degree, at least, free from the contagion.

Every article coming from the patient's room should be disinfected before being used by any other member of the household.

The patient's diet should consist of milk, eggs, and broths, together with brandy, which is always indicated early in the disease.

In the nature of medicinal treatment, local antiseptics, internal antiseptics, and tonics are of the first importance. In the beginning of all cases the mild and corrosive chlorides of mercury should be given, in moderate doses, until the system is well under their influence; and good results are obtained by continuing the bichloride throughout the disease. Also, sprays and gargles of this antiseptic, in proper strength to suit the nature of the case, give excellent results if used early.

Recently we have successfully treated several cases of this disease by exposing large quantities of chloride of lime in the room, and believe the inhalation of the free chlorine had a beneficial effect, as some of these which began as very malignant did exceptionally well from the start.

In the free use of pineapple juice we have the benefit of a vegetable pepsine or solvent of membrane, which acts favorably on the exudation, and good results are undoubtedly obtained from the same. Peroxide of hydrogen, when used freely, keeps the parts clean, and is an excellent adjunct to the other antiseptics. When the patient is old enough to be controlled without a struggle, which exhausts him, it is well to touch the visible membrane and inflamed parts with a piece of absorbent cotton, wet in a solution of bichloride, tincture chloride of iron and glycerine.

A local treatment, which is gaining in favor at the present time, is to inject aquæ chlori under the exudation. This seems to be a rational undertaking, and those who have used it find that, when used early, it prevents the further development of the bacilli.

For internal remedies, further than calomel and bichloride, iron, chlorate of potash, quinine and strychnine, together with plenty of alcoholic stimulants and nourishing food, are those that can be depended upon with the most certainty.

To spray the nasal passages, whether or not infected, with a clean spray is, no doubt, a wise procedure, as this keeps these parts comparatively free from the contagion, if it has been done before the exudation has commenced to form.

In laryngeal diphtheria, further than the treatment outlined above, steam inhalations of lime water will be found very useful. If the glands of the neck are enlarged apply warm flax seed meal poultices. In laryngeal diphtheria an emetic does good if the patient is strong enough to bear it, but care must be especially used here or we will lose our patient from exhaustion. Of course in severe cases tracheotomy or intubation are the only reasonable resorts we have for relief; but if these are refused by the family an emetic should then be employed at any risk to give one more chance for life.

Patients convalescent from this disease should be under the care of the medical attendant sometime after the local trouble has subsided, and every means should be used to, if possible, prevent paralysis. Which is so prone to follow, and may end life so suddenly when striking a vital part.

To conclude: Careful antiseptic and tonic treatment, together with the best of nourishment and nursing, is all that can be done for diphtheria with our present knowledge of its pathology.

But in this, as in other of our contagious diseases, a new treatment seems to be on the horizon of discovery. Bannatyne, in the *Glasgow Medical Journal* for September, 1891, tells of good results that he has obtained by treating diphtheria with injections of erysipelas albumose. In this we have a battle

between microbes, and this is the method that, no doubt, will be eventually accepted as the true treatment of all contagious diseases caused by specific bacilli, such as tuberculosis, diphtheria, cholera, scarlet fever, etc., etc.

By vaccination small-pox has been robbed of its fatality.

Pasteur has relieved hydrophobia of its horror, and when the bacilli which cause our contagious diseases are better known, and as their actions are better understood, so soon, we believe, will there be a revolution in the treatment of this form of disease.

Chemicals that act on bacteria with such violence that they at times endanger life, will be set aside, and in the new era of medicine, which is near at hand, no doubt the bacteriologists will give us known strengths of antagonistic bacilli, so that all we shall have to do after determining the specie and characteristics of the invading microbe will be to inoculate with its antagonist, and at once the opposing forces will annihilate each other, and the patient will be free from the disease. That learned discoverer, Koch, and his colleagues made a great mistake by allowing the public to induce them to publish the results of their investigations with tuberculosis before they were completed. But failure does not destroy the virtue of their theory. They are certainly working in fields ripe for the harvest, and either they or succeeding bacteriologists will surely garner golden grain.

THE ASEPTIC CLOSURE OF LONG STANDING SINUSES HAVING THEIR ORIGIN IN TUBERCULAR JOINTS.[1]

By AUGUSTUS WILSON, M.D.,

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RECOGNIZING the very extensive character of this subject, I have avoided elaborate details and arranged the paper more in the form of a summary based upon modern aseptic practice, so that it should not occupy more time than is allowed for reading of papers. The class of cases that it is the purpose of this paper to discuss, embraces a very large range of chronic runners from one hospital to another. They are usually designated as incurable or hopeless, and, as a consequence, are subjected to the so-called palliative or expectant plan of treatment, attention being largely confined to medication.

It occasionally happens that spontaneous resolution and closure of sinuses or fistulæ takes place, but this is the exception, the rule being that they continue patulous for a long time, often during the entire life of the patient. The well-recognized and thoroughly established fact that, so-called cold abcesses frequently undergo absorption when unopened, would seem to indicate the advisability of favoring such absorption by a closure of the openings that may have occurred from over-accumulation.

The causes of these sinuses may be sought in a tubercular deposit in a bone or joint, or in the soft structures that surround a joint, which has formed a cold abcess, cazeation and decomposition taking place, rupture follows. Part of the contents of the sac escapes and a sinus remains for a long period of years to act the part of a sewer-pipe.

When rupture does not take place spontaneously, it is apt to be induced by the evacuation of a cold abcess by an aspirator, for in this procedure it rarely occurs that the entire deposit is removed because it is not of the nature of a fluid. In the closure of the skin-wound made by the aspirator, the cicatrice is only superficial, and the subsequent spontaneous rupture is therefore facilitated at the site of puncture.

Likewise after incision, when the contents of the sac are thoroughly removed, the too-long continued use of the drainage tube, or in some instances its use at all produces a sinus by the separation of tissues that would otherwise granulate. This sinus has not only no tendency to close, but the oft repeated injections for the purpose of rendering the parts aseptic interferes with any granulation process that may have been commenced. In these ways sinuses are formed which persist, although often subjected to prolonged medication because of the supposed danger to the patient of any radical attempt at closure.

The teaching of Gross is still observed. "When the fistule has been of long standing, and has acted all along as a drain upon the system, serving perhaps to counteract some other affection, such as phthisis, or a tendency to apoplexy, no operation should be practised, since it could hardly fail to provoke mischief; in fact, serious organic disease of any kind is a contra-indication to an operation. The only exception to this is where the fistule is a cause of excessive local distress, completely depriving the patient of sleep, appetite, and comfort. Under such circumstances the surgeon could hardly refuse his aid, but before doing this, he would be sure to open a new course of counter-irritation, in the form of an issue or seton, in some other or more eligible portion of the body, thus establishing a drain at least equal to that which he is about to suppress as a means of temporary mitigation.

In marked contrast is the modern teaching, for since the above was written in 1872, the adoption of aseptic methods has made it possible to reverse entirely the plan of procedure.

It is often best to consider a tubercular focus to be a malignant growth tending to increased destruction if undisturbed. While it is not malignant *per se* in the sense of malignant tumors tending to the death of the patient, radical measures will more frequently and successfully be resorted to if this view is kept in mind in preference to its harmless character.

The freedom from disastrous results, in fact, the satisfactory recoveries obtained in excisions of tubercular hip disease, knee-joint involvements, and even when vertebræ are attacked, all tend to urge the adoption of this plan of procedure in the early stages of the disease to limit the extent of the excision to the minimum.

Excision is not confined to early stages, but is as well adapted to conditions where the necrosis is very extensive and is a procedure now well established, but it not infrequently happens that a sinus follows which could have been avoided by recourse to methods to be alluded to later.

The vicious character of the infected parts tends to their non-union, and every means that can safely be resorted to for the complete closure of long-standing sinuses should be resorted to.

The great difficulty that is experienced of tracing a sinus after the parts have been laid open may be met in two ways. Prior to opening the sinus a probe may be introduced to the furthermost part and allowed to remain as a guide.

[1] Read before the Philadelphia Academy of Surgery November 2, 1891.

The injection into the sinus and cavities in connection therewith of some coloring matter which will be innocuous, and at the same time so stain the lining membrane that its discernment and quick removal may be facilitated. I have found that a solution of pyoktanin meets the indications efficiently, for it possesses germicidal properties, and the greatest objection to its more general use is here its highest recommendation, for its purple color stains the tissues with which it comes in contact, thereby clearly indicating the tissues that it is desirable to remove. The object to be sought is the entire removal by clean incision of all of the stained tissue or lining membrane of the sinuses, and when the site of the original tubercular deposit is reached to excise it completely.

The laceration of tissues by tearing as a result of the use of an ecrasuer or dry dissector or handle of a knife tends to sloughing, and the necessity of providing an outlet by drainage tube, the avoidance of which is of considerable importance.

The infection of freshly incised tissue by the bacillus tuberculosa may be avoided by the free use of irrigation of sterilized water, or solution 1 to 2,000 bichloride of mercury during the progress of the operation and the efficient use of iodoform before closure.

It not infrequently happens that a suspected bone origin to a sinus is found upon laying open the parts not to exist, but that the tubercular deposit is confined to soft structures and its ready removal easily accomplished.

In cases where a bone is found to be involved, the removal of the necrosed or diseased part should be done by a chisel, to the end that only normal tissue be allowed to remain. The process of superficially scraping is inadequate for the entire removal of the diseased tissues, and by its laceration does not conduce to healthy cicatrization.

If one or more contiguous bones are partially involved, the entire removal of such bones or of the joints is not essential, but only of such parts as are involved. To let the sinuses alone, or to continue the expectant plan of treatment, means a continuance of the annoyance of dribbling pus, positive discomfort, and a constant menace to the general health with but slight tendency towards recovery.

The constitutional disturbance depends more largely upon the exudation from the lining membrane of the sinus than from the tubercular deposit, as evidenced by the frequent freedom from constitutional disturbance in cases of unopened cold abscesses, and by the very great improvement in the general health following the successful closure of those sinuses which have existed for a long period.

The simple injection plan of treatment is usually found to be inefficient because of the mechanical difficulty of covering the entire surface of a sac by any material thrown in through a single opening, without recourse to hyperdistension. The danger of internal rupture of the sac at some weak and inaccessible point by hyperdistension is very great, and when this does take place not only the material injected is thrown outside of the sac, but a new field of absorbent vessels is exposed to infection of bacillus.

A vent hole or counter opening at the opposite side or furthermost end of the sac or sinus avoids the danger of rupture and acts like a check valve, enabling the operator to command the quantity of material injected as well as the force of the flow.

Sinuses of great length may be closed by stages where the discharge is considerable by substituting an opening nearer the focus, thereby diminishing the constitutional effect of exudation from the greater surface and the portion between the openings completely closed. In turn, this may often be still further shortened, until finally a complete closure is accomplished.

The danger of stitch wound abscess and the unsightly transverse cicatrices, which is very considerable in these cases, may best be avoided by having the sutures embrace only subcutaneous tissues, bringing the needle out through the edge of the incision and not through the skin. By this means deeper union is induced and the possibility of any gaping of the skin is avoided by the use of collodion-saturated gauze covering the incision.

Iodoform is pre-eminently a germicide for bacillus tuberculoso, and it is of great value in making it possible to seal the wound. The form most satisfactory for use in these cases being a 10 per cent. emulsion in freshly-boiled olive oil. The dry powder may be used, but its even distribution is difficult to accomplish and the crevices are not reached. The etherial solution has been found objectionable, on account of its too rapid absorption and the danger of iodoform intoxication.

The resort to packing with lint or other substance for the purpose of keeping the skin wound open and to induce granulation from the bottom, as well as the use of any kind of drainage, are generally unnecessary and often positively harmful, in favoring a continuance of the sinus.

If the parts are cleanly incised and maintained in close approximation, primary union may be expected throughout, and, if only healthy tissue be allowed to remain, drainage need not be employed. Occasionally it may be deemed expedient to use drainage for the first twenty-four hours, in cases where the pus continues to flow from inaccessible points, but its continued use is disadvantageous.

The procedures to be adopted may best be considered if the conditions are grouped as follows:

1. Those sinuses in connection with accessible joints where the tubercular deposit can be safely removed.

2. In similar positions, but where its removal cannot be safely accomplished.

3. Sinuses from inaccessible deposits.

Under the first heading, sinuses in connection with accessible joints, where the tubercular deposit can be safely removed, the modern plan of procedure is self-evident. Under strict asepsis, or chemical antisepsis, the focus should be removed in its entirety, leaving only healthy tissue behind. The cavity of the sinus denuded of its lining membrane by clean incision, in preference to tearing or scraping, and the entire cavity of the sinus and of the site of the former deposit rendered aseptic by thorough washing with peroxide of hydrogen, followed by irrigation of 1 to 2,000 bichloride of mercury, and, finally, the entire surface covered with iodoform emulsion. The parts are then to be brought into co-aptation by subcutaneous sutures; iodoform dusted over incision; collodion gauze; finally, hermetically sealing the wound. Gentle but firm pressure with aseptic gauze and bandages complete the dressings.

II. Where the sinuses are in connection with accessible joints, where the removal of the tubercular deposit cannot be safely accomplished.

In these cases, as, for example, in hip disease, when the ilium has become denuded or involved, or in the lumbar vertebræ, it has been found judicious surgery to cut away all that could safely be removed, washing the parts as thoroughly as though the entire removal had been accomplished, as referred to

under the first heading, and sealing the wound as described.

It will be expected that new cold abscesses will form from the unremoved unhealthy tissue, necessitating reopening, and the probability of this should be placed before the patient, so that at the very first indication of the necessity, the former procedure should be repeated. The relief afforded by a cessation of the annoyances of the sinuses will more than compensate for the possibility of repeating the operation, nor is it certain that repetition will really be necessary.

III. Where the sinuses have their origin in inaccessible deposits—for example, when the bodies of the dorsal vertebræ are involved—it is often clearly impossible to lay open the sinus or reach the site of deposit, and recourse must, therefore, be had to other but less satisfactory means.

In most of these cases, the sinus only can be considered, and remedial measures must be confined to injections to render the parts thoroughly aseptic. A counter-opening, when practicable, greatly facilitates the accomplishment of the desired end—in fact, is often really indispensable. The closure of the sinus may be facilitated by excising as much of the outlet as possible, so as to procure union to a greater depth than by simply closing the skin opening. Both openings being closed, pressure is to be relied upon to close the sac. It is possible that in the attempt to eradicate the bacilli and effects from the sinus that the injected germicide may reach the site of the deposit, and act directly upon the focus, in which case the permanent benefit will be great.

In the cases upon which I have thus operated I have had no re-opening, or constitutional or other disturbances follow, but the time that has elapsed since the operations were performed is entirely too short to afford any indication of the permanence of the results obtained.

To have closed and kept closed for a year a sinus of the hip-joint of twenty-three years' standing is enough encouragement for a continuance of the method. To have removed a drainage-tube from a knee that had been in constant use for eighteen months, the sinus having been daily subjected to washing, and new external dressings employed to catch the pus that should not have been allowed to continue to flow, and to have closed the sinus and have it remain healthy for nearly six months, is also encouraging.

It is my purpose to detail the results in these cases when sufficient time has elapsed to warrant the statement that they are permanently benefited. The full purpose of this paper will have been met if it assists in any way in the judicious treatment of a most troublesome class of cases.

1611 SPRUCE STREET.

DIPHTHERIA.[1]

By DANIEL STROCK, M.D.,

Surgeon to the Cooper Hospital; Lecturer on Dietetics in the Camden Training School for Nurses; Member Executive Council of the New Jersey Sanitary Association; Ex-President Camden City Medical Society, etc.

IN acceding to this society's request to prepare a paper upon the subject of diphtheria, I feel that I have been assigned a topic to the importance of which I cannot do justice.

While disclaiming to assume the rôle of an alarmist, truth compels the statement that this disease which has been so prevalent and fatal in Camden during the past year is still scourging our city, and the indications at present are that with the onset of cold weather there will be an increase in the number of cases. Therefore the consideration and discussion of this subject is opportune; and, no doubt, we will all be benefited by an interchange of views and experiences.

The scope of this paper does not involve the study of the history of this disease; as physicians we are chiefly concerned with the cause, prevention and treatment.

Diphtheria has prevailed for several thousand years with more or less virulence, and, as a natural consequence, much controversy has been waged in considering the question of its cause, and whether or not it is primarily a local or constitutional disease. Without entering into the various theories that have been advanced from time to time, we may now without hesitation assert that the cause of true diphtheria is a specific germ, called the bacillus diphtheriæ. Dr. Lœffler, a German investigator, has the honor to have been the first to isolate and differentiate this bacillus, which he did in 1884. Since that time many other searchers after the truth in various parts of the world have made independent investigations, and have fully confirmed the opinion expressed by Lœffler.

The only confusing point in these investigations has been the association with the Lœffler bacillus of a streptococcus apparently identical with the streptococcus pyogenes and streptococcus erysipelatus, and a number of cases of diphtheria have been observed wherein the above mentioned streptococcus has been nearly constantly present. "These forms of so-called diphtheria are most commonly associated with scarlatina, measles, erysipelas and phlegmonous inflammation, or occur in individuals exposed to these diseases; but whether exclusively under these conditions is not yet fully established." Lœffler says: "That the chain-forming micrococcus can cause a disease similar to diphtheria, when it enters the pharynx and spreads toward the lungs in the tracheal lymph channels, I consider very probable." And he says further: "On the whole, we are abundantly justified in the assumption that in a certain class of cases, at least, diphtheria is caused by a streptococcus having the character set forth above."

Thus, while a streptococcus similar to the streptococcus pyogenes has been found in a certain number of cases of pseudo membraneous exudation, or so-called diphtheria, yet the one germ invariably present in true diphtheria is the bacillus diphtheriæ of Lœffler, and the conclusion of various bacteriologists is that there can no longer be any doubt of its specific character. This bacillus, though always present in the diphtheritic deposits, does not invade the blood or organs, or even the affected mucous membrane.

It is also shown that the constitutional symptoms that accompany diphtheria are caused by a toxic albumen produced by this bacillus. This albumen, when injected into animals, produces the characteristic paralyses observable in human diphtheria.

Having what we may now deem to be definite information as to the cause of this disease, we are in a position to understand the importance of preventive measures, and are enabled to intelligently resort to such remedies as investigation and clinical experience have shown to antagonize the propagation and growth of the bacillus diphtheriæ.

To my mind, prophylaxis is the true and, perhaps, only sure way of combating diphtheria, after all. If we accept as true the bacillary origin of the disease, then must we acknowledge that it is *primarily* a local affection, followed later by systemic involve-

[1] Read before the Camden (N. J.) City Medical Society, November 12, 1891.

ment. But it is the *general* symptoms that first attract attention to the patient, and frequently while yet there are no signs of pharyngeal invasion. Now, if the general involvement is due to a poison generated at the seat of local lesion, we must assume that such poison had been formed *prior* to the onset of malaise and fever. If so, then there is but one conclusion to be arrived at—and that is that the bacilli were present in the nares, pharynx or larynx, and had already generated sufficient poisonous products to infect the system, *before* the characteristic exudate was apparent to ocular inspection. Thus, when we are called upon to treat the patient, what was a local, insidious affection, has now become a general, a systemic disturbance, with, perhaps, even at this stage, only slight evidence of localization. Hence, our local germicidal treatment is instituted too late to prevent general infection, although we may stay further progress of the malady. Unfortunately, the chances are that we will not prevent further advance of the disease; and we may rejoice if we save our patient.

But if we anticipate the results here depicted, and in a given case institute pre-invasion treatment, we may have the satisfaction of securing the ideal results contemplated by preventive medication.

Prophylaxis, then, includes local as well as general measures.

Local measures contemplate the use of germicidal agents, either in the form of spray or gargles, and by insufflation into the nostrils. Lœffler recommends that every healthy person should use, every three or four hours, a solution of bichloride of mercury, 1–10,000, or, what he considers better, a solution of 1/8–10,000 cyanide mercury. He also recommends chlorine water, (1–100) and thymol (1–500 and 20 per cent. of alcohol).

What we may term general prophylaxis involves supervision of the schools, both the week-day and Sabbath schools. There can be no doubt that this disease is largely propagated through the instrumentality of these agencies, where large numbers of children gather and intimately associate during the hours of study and play. As between the sexes, the relations existing between the girls of a school are more intimate than the fellowships between the boys; and herein is an element of increased danger to the girls. The reprehensible practice of indiscriminate kissing is largely in vogue in the female department of schools, and is directly responsible for the transmission of this disease in a certain number of cases. As bearing upon this point, my own experience has been that the large preponderance of school children attacked have been girls. When we consider that, after invasion, there is undoubtedly a period of local activity, without pronounced symptoms, during which the germs are elaborating the ptomaine that will subsequently infect the entire system, we can understand what a menace a child unconsciously affected with diphtheria in this incipient stage must be to her companions in a school room. During the past year I have met with a number of instances where children affected with diphtheria have passed directly from the school room to the sick bed.

Therefore, as a measure of safety to the young, in whom there exists marked susceptibility to this affection, during the prevalence of diphtheria all public schools should be closed, and what are known as the infant classes of Sunday-schools should be dismissed until such time as the disease is in abeyance. If this were done, there can be no doubt but that the progress of diphtheria in any community would be largely controlled before its ravages had made so many homes desolate.

General prophylaxis also involves the consideration, whether or not the source of water supply is a disseminator of the disease. To a community situated as is Camden, whose portable water is contaminated with the sewage of more than a million people, this question is a vital one. We cannot delude ourselves with the belief that the emptying of large quantities of human excreta in our drinking water is unattended with danger, as the germs concerned in the production of diphtheria and certain other diseases are tenacious of life, and survive a long time in water. Therefore, all the discharges from a diphtheritic patient, and particularly that which is expectorated, should be carefully and thoroughly disinfected before it is allowed to pass into the sewer.

Isolation is another of the general prophylactic measures resorted to to prevent the propagation of diphtheria. When a case is met with in any household, the patient should be immediately removed to a room remote from the portion of the dwelling occupied by the family, if possible, and no one permitted to enter the room but the nurse. The food, drink and medicine used by the patient should be placed where it could be conveniently obtained by the nurse. The discharges should be thoroughly disinfected before they are removed from the room, and the house saturated with sulphurous acid gas, obtained by burning sulphur, with moisture, in all the rooms. These measures, joined with the thorough fumigation of the room after it is vacated, and the disinfection, or destruction by burning, of the apparel and bedding used by the patient, would tend to limit the disease in that house to the original victim.

Probably to ourselves, as physicians, the most important consideration involved in the discussion of this subject is the treatment. We all know the disease when we meet it; we understand the importance of prophylaxis; but we are not all in accord as to the treatment, because we know there is no one remedy, or a series of remedies, that we can resort to and feel assured that they are specifics. Therefore, as I have heretofore asserted, the only specific treatment of diphtheria is the treatment by prevention. If every patient could be seen in that early stage while yet there is no systemic involvement, then could we have hope that by vigorous resort to bacteriocides we would effect destruction of the germs before the elaboration and absorption of the ptomaine that causes the train of general symptoms that so frequently results in death. We have no measure of the quantity of absorption that must ensue to produce fatal effects. Experience teaches us that the apparently mild case will die of heart paralysis as well as the patient whose system seems saturated with the characteristic poison. Our local antiseptic treatment must be as thorough in the one instance as in the other; for once the general system is involved, let me repeat, there are no remedies that we can use and feel assured they will cure. The more experience a man has had in treating true diphtheria, the more readily, I am convinced, will he endorse this assertion.

Treatment must be constitutional as well as local, and general constitutional measures include recumbency and nourishment. The patient should be immediately placed in bed, and kept there until recovery is complete. When you direct that the patient must be recumbent, impress upon the nurse or the parents that you mean what you say. Recumbency must be maintained without deviation.

Nourishing the patient constitutes an important part of the management of these cases. Feed the patient systematically with a range of foods that are calculated to sustain the wasting powers of the system and combat the tendency to anæmia. The most important guide for feeding is the condition of the stomach. If food is taken with apparent relish, and is digested, the patient may have, if not too young, minced beef, beef juice, bread and milk, junket, milk, rice soup made with beef or mutton, eggs soft-boiled or poached, raw eggs in milk, gruels, etc. Various other articles of food will suggest themselves, the important point always being in mind that we must avoid the administration of food that is calculated to produce disturbance of the stomach or bowels, and thus defeat the object we have in view when we give nourishment. When the patient refuses aliment, rectal nutritive enemetas should be given, consisting of beef juice, peptonized milk, beef or mutton broths, etc.

Constitutional measures also include the administration of drugs calculated to husband the strength of the patient, to antagonize anæmia, and to sustain the heart's action. Drugs exhibited with these objects in view should be given *early*—that is, they should anticipate the conditions they are designed to combat. Drugs for this purpose include iron, quinine, strychnine, and liberal quantities of alcohol. The heart tonics proper that may be used are digitalis, strophanthus, spartein, caffeine, camphor and musk.

For the high temperature that frequently occurs, antipyrine and antifebrine are sometimes used. In my judgment he is rash indeed who would use this class of remedies in diphtheria, as their specific action upon the heart must render their use a grave menace to the patient. Corrosive sublimate is considered by some to be the most important internal remedy. This drug may be given every two hours, in doses ranging from gr. $\frac{1}{75}$ to gr. $\frac{1}{15}$.

Locally, a host of remedies have been used, and it would serve no good purpose to enumerate them all. At the present time we confine ourselves to those of known germicidal and antiseptic powers, chief of which, perhaps, is corrosive sublimate. This may be used as a spray in solutions of 1–2,000 to 1–10,000. Other articles of this class are the peroxide of hydrogen, boracic acid, carbolic acid and salicylic acid.

A solution strongly recommended by Lœffler, consists of carbolic acid 3 per cent. in 30 per cent. of alcohol in distilled water. Another is alcohol and turpentine, equal parts, with 2 per cent. of carbolic acid. For the nose a saturated solution of boracic acid should be used.

Latterly the peroxide of hydrogen has largely supplanted the corrosive sublimate as a local application. It should not be used full strength, as its liability to excoriate may create new foci for the disease. The medical journals lately have contained a number of papers lauding this article as a remedy in diphtheria, and some writers have given the impression that it is almost infallible in this disease. I have used it in a large number of cases during the year, and I can say, basing the assertion upon that experience, that in a case of true diphtheria peroxide of hydrogen apparently exerts no beneficial influence upon the course of the disease. The seemingly mild cases are just as liable to die of heart failure, and the more severe cases pursue an uninterrupted course to the grave. In one case, at least, where it was used in the nostrils, the effervescing action was observable through the lachrymal canal into the eyes, and was, no doubt, the means of the infection and destruction of those organs. Its application does not prevent the extension of membraneous deposits. Under its use a pharyngeal case may become laryngeal or post nasal, and a nasal case may become ocular. The tendency to complications is just as great, and the number of instances of heart failure are not lessened. My opinion of the peroxide of hydrogen is, that it does not affect destruction of the bacillus diphtheriæ, and it does not prevent absorption of the specific ptomaine. But the effervescing that occurs when it is brought into contact with the diphtheritic membrane *does* exert a moral influence upon the parents of the patient. They observe that action, and are impressed with the idea that the membrane is undergoing rapid destruction; and therein, perhaps, is the chief use of the peroxide of hydrogen in this disease.

TREATMENT OF DIPHTHERIA.

By A. S. GERHARD, M.D.,
PHILADELPHIA, PA.

MY treatment of diphtheria is based upon the assumption—in my opinion a demonstrated fact—that the disease is primarily of *local* origin, brought about by infection. In what manner or by what means this infection, by a specific pathogenic microbe is accomplished, is immaterial to the question of treatment.

The task before the physician, therefore, is—if possible—to kill this microbe; to prevent its dissemination and spreading through adjacent canals and cavities; to remove its external products—the diphtheritic deposits—from the fauces and nasal passages as fast as they accumulate; if its soluble ptomaine has entered the circulation, producing the well-known *general* symptoms of the disease, together with some of its sequelæ—such as paralysis—to neutralize its effects; if the larynx and trachea become involved and obstructed, to attempt removal of the obstruction, or to open a passageway for oxygen to the lungs; so to strengthen and fortify the patient's system that he may be able "to bear up until the disease has run its course," and, finally, to treat the sequelæ.

It is not my purpose here to take into consideration all the points just stated. I desire simply to present my plan of therapy in reference to the first three. If the treatment is successful as to these, the others very rarely require attention.

Of all the many and various substances, aseptic, antiseptic, disinfectant, astringent, etc., none are entitled to the appellation *microbicide*, as locally used or inwardly given in the treatment of diphtheria. The most efficient of these are the most dangerous, because more is required to kill the microbe than is necessary to kill its host. But in the light of our present knowledge and experience, the employment of such substances is absolutely required in order successfully to combat the disease. And of them all, according to my more recent experience, the *peroxide of hydrogen* is the best and most satisfactory.

It is true, peroxide of hydrogen here can in no sense be regarded as a microbicide *per se*. The diphtheria microbe is an aërobic one, and therefore is not affected by oxygen, either in its atomic or molecular state. But the unsatisfied atom of oxygen of the peroxide of hydrogen (H_2O_2) in its escaping, or *nascent* condition, when brought in contact with diphtheritic deposit, immediately seizes upon two atoms of hydrogen, an essential chemical constituent of such diphtheritic deposit, and tears it out of its combination. The diphtheritic deposit loses its identity

as such in consequence, and the microbe is deprived of one of its necessary conditions of life and growth. The chemical reaction here is actually visible, the sizzle and fizz being plainly seen. The resultant products, both as to the decomposed hydrogen peroxide and the new combination between the nascent oxygen, and hydrogen of the diseased tissue, as is easily understood, are simply water (H_2O).

This substance is, therefore, perfectly harmless and innocuous as far as the patient is concerned, and the affected air passages can be freely and frequently laved and douched without risk, no matter how much may be swallowed or enter the windpipe. I use for the purpose of application a simple bulb syringe of two or three ounces capacity, and inject the peroxide, diluted with an equal amount of water *which has been boiled*, either directly through the mouth into the throat, or through the nares along the nasal passages into the pharynx. At times, especially if the child struggles and resists, some is forced into the larynx, inducing a fit of coughing; but this is all the better, since thus very frequently much deposit and membrane is dislodged, and expectorated and sneezed away. I direct at the same time that the hands and face and interior of the mouth, and the throat, if gargling is possible, be frequently washed with a 5 per cent. solution of boric acid in water which has been boiled; the object of this is obvious. I have long ago discarded the use of swabs and probangs, not only as being unnecessarily cruel, but on account of the danger of wounding the pharynx, or even the larynx, of ramming some of the poisonous exudate down into the trachea, and thus setting up just that condition of things which necessitates the dangerous and generally futile operation of tracheotomy or intubation as a *dernier ressort*.

The *general* treatment is based upon the same therapeutical principles, with the further intention of preventing and counteracting the effects of the absorbed poisonous ptomaines, and of fortifying the system against their ravages. In order to fulfill these indications, the following formula may serve as a pattern for a child five years of age:

R.—Potassii chloratis	3.00.
Acidi hydrochlorici	2.00.
Tincturæ ferri chloridi	5.00.
Syrupi sarsaparil. comp.	15.00.
Aquæ destillatæ	40.00.

M.—S. Take a teaspoonful every two hours.

In this prescription it will be noticed we have the slow but constant evolution of free chlorine gas, one of the most powerful microbicides and efficient aseptics known, and to such an amount as sometimes to blow out the cork, or explode the bottle.

The question may be asked here, Why not use the officinal chlorine water? To which I may reply, There is the same difference, as to chemical affinity, between old chlorine gas, as found dissolved in water in the shops, and *nascent* chlorine, as there is between the ordinary oxygen gas in the atmosphere and that *allotropic* form of it just being liberated from hydrogen peroxide, as above noted. They may both be antiseptic, but neither is aseptic. When this nascent chlorine thus formed enters the mouth and is swallowed, it immediately permeates every fold and fissure in the oral and faucial, and often the nasal and bronchial cavities and canals, exerts its aseptic and microbicidal energy, at the same time sterilizing the circumjacent healthy tissues, thus preventing the spread of the disease, while at the same time it assists directly and indirectly in throwing off the exudate. We may also assume that some of this gas, on account of its great diffusibility, enters the circulation, particularly through the stomach, and possibly assists in counteracting the ravages of the absorbent poisonous ptomaines.

If we now add to this mixture the proper dosage of quinine, preferably the muriate, in which it will readily dissolve, we have at the same time a medicine which, according to common and general experience, is perhaps best calculated to give that tone and stamina to the system which, together with nourishment and diffusible stimulants, will carry the patient successfully through the crisis.

The treatment may be summed up as follows:

1. Those affected are isolated, if at all possible, by placing them in the most remote room of the house, from which everything of a textile nature—carpets, hangings, etc., excepting what can subsequently be boiled or burned up—has been removed. This room is to be kept well lighted and ventilated, and the temperature kept equably at about 65° F. The air must be "disinfected" by the use of chlorinated lime, carbolic acid, or, better still, by burning a little sulphur on an iron shovel several times during the day.

2. The diet must be regulated according to the patient's appetite and taste, and the experience of the mother, or other attendant, or the judgment of the physician. If septic symptoms supervene, of course "beef tea and milk punch," and other suitable articles of concentrated and predigested food, and diffusible stimulants, must be given. Cold lemonade, ice-water, and cracked ice must always be on hand; a small piece of ice in the mouth now and then, crunched between the teeth, or swallowed whole, is exceedingly grateful, as well as beneficial.

3. The administration of the chlorine mixture, as well as the use of the hydrogen peroxide, must begin at once, and must be regularly and religiously pursued to the end, in spite of all struggling and resistance—a determined attack of diphtheria, in my experience, always means a determined fight. The application of the peroxide, from two to six times during the twenty-four hours, should be done by the physician himself.

4. A plentiful supply of otherwise useless rags, for cleansing and wiping, should be constantly on hand; these must be burned up as fast as they become soiled. After the case is ended, the bedticking, pillow cases, spreads, and sheets must be subjected to prolonged boiling and thorough washing with carbolated soap, while the contents of the mattress and pillows must be burned. The sick-room itself must be aired and ventilated, thoroughly scrubbed and scoured, given access to the sunlight, and fumigated with sulphurous acid gas.

613 North Sixteenth Street, November 16, 1891.

TREATMENT OF DIPHTHERIA.

By FRANK WOODBURY, A.M., M.D.,
PHILADELPHIA.

RECOGNIZING the fact that diphtheria is a form of septicæmia, or toxæmia, depending upon the pernicious activity of certain micro-organisms, the treatment should have three main objects in view:

1. The prevention of further introduction of the poison from without.

2. The arrest of development of centers of auto-infection, especially in the upper air-passages.

3. The administration of agents which, after absorption, will act as antidotes to the toxic products of the local disease centers, and overcome their depressing effects upon the heart and nervous system.

The first requirement would be met by securing a good environment, such as a well ventilated upper room, without stationary wash-stand, or adjoining bath-room and water-closet, and having no sewer pipe discharging its foul miasm immediately above or below the window. A room into which the sunlight comes in the morning is desirable. It should be heated by a stove or open grate, and it is hardly necessary to say should only contain furniture capable of being cleaned with bichloride solution, and hangings or rugs which can be steamed or otherwise disinfected. A block of wood one or two inches in height, and extending the full width of the window frame, can be placed under the lower sash, so as to leave an open space between the upper and lower sashes for ventilation of the room. The second indication, the disinfection of the local centers in the throat or nose, or elsewhere, is fulfilled by various applications, sprays or washes. Among the best of these is solution of hydrogen peroxide diluted with one or two volumes of pure water. Zinc sulpho-carbolate (3 to 10 grains to the ounce, or in the zymocide solution furnished by Reed and Carnrick, combined with other disinfectants), sulphur in fine powder insufflated into the throat at short intervals, beta-naphthol and sugar used in the same manner, Monsel's solution, or tincture of chloride of iron diluted with glycerine and water, and applied by probang or brush; inhalations of the vapor from slaking lime, chlorate of potash lozenges dissolved slowly in the mouth, the use of digestants, such as trypsin, papayotin, etc., combined with douches of mercuric chloride or iodide, or even of common salt, all accomplish the desired object more or less completely. Some of the remedies administered by the mouth also exert a local effect in the act of deglutition. The membranes should not be roughly detached from the throat, but their separation should be encouraged by the use of antiseptic sprays, or by carbolic acid or chlorine water injections, as in the method recently advocated by Dr. A. Seibert, of New York. The third object, the counteracting of the poison in the system is also attained by various means. The calomel method advocated by Dr. Reiter, and more recently by Dr. Daly, of Pittsburg, seems to be what the latter claims for it, the simplest and most efficient treatment of diphtheria. Of this agent, two grains may be given every hour until serous discharges are obtained, having the appearance of clear water with some green bile floating upon the surface. The bichloride (gr. $\frac{1}{10}$–$\frac{1}{16}$ every hour or two) has also given satisfactory results. The chlorine solution of Watson is also very efficient, and has the advantage of not being toxic itself; chlorate of potassium being depressing to the heart should be used with great care, if at all; at the same time the iron and potassium chlorate mixture has been largely used and with success. Dr. Traill Green, of Easton, Pennsylvania, prefers chlorate of sodium lozenges (gr. j–ij), to the ordinary chlorate of potassium lozenges, and I have used them on his recommendation with satisfactory results.

In any given case I would be guided by circumstances as to the choice that I should make of the preceding remedies. From personal experience I would give alcohol a very high place as an antiseptic in diphtheria, and administer it in the form of brandy, whiskey, or gin, in 15 to 30 minim doses every hour or two, steadily continued, to the youngest children, carefully watching its effects. In one case in the practice of my friend, Dr. Bernardy, a child apparently dying was allowed to drink freely of lager beer, and at once improved and made a good recovery. Quinine in tonic doses, combined with strychnine, if there is marked weakness, or paralysis, is useful during convalescence. Food should be given at short intervals in an easily assimilable form; peptonized milk or broth, ice cream, toast-water with beef peptonoids, Mosquera's beef meal, or Bovinine, nutritive enemata, and various other expedients will suggest themselves. Cold applications to the throat, sponge-bathing with alcohol and water, add to the comfort of the patient. In case of laryngeal obstruction early tracheotomy may save life, but when it is done it were well it were done quickly.

218 S. SIXTEENTH ST.

MEMBRANOUS CROUP.[1]

BY W. BLAIR STEWART, A.M., M.D.,
Instructor of Medicine in the Medico-Chirurgical College, Philadelphia.

GENTLEMEN:—There is no disease in the whole field of medicine that will tax your ingenuity and skill to a greater extent than will membranous or true croup. It is a disease that every physician should thoroughly understand, and be prepared to fight in any of its stages. It is a disease where the physician must be master, and assert his authority to the extent that his directions must be followed strictly to the letter. Never take hold of these cases in a half-hearted, timorous and doubting manner; but, recognizing the fact of the small proportion of recoveries that take place, assume charge with a resolution to fight it to the bitter end. Unless you begin with these premises it would be far better for your reputation to refuse treatment entirely. True membranous croup is a comparatively rare disease in the practice of most physicians, but this offers no excuse for its neglect.

SYNONYMS.

This disease is known under the names of croupous, membranous or pseudo-membranous laryngitis; true croup and laryngeal diphtheria in children.

DEFINITION.

An acute, specific inflammation of the laryngeal and superior tracheal mucous membrane, accompanied by a fibro-plastic exudation or false membrane; constant fever; great dyspnœa, and usually terminating in death.

ETIOLOGY.

Every disease is dependent upon two distinct conditions that have been spoken of as a receptive or predisposing condition and the true or exciting condition. A person in perfect health will not be attacked with membranous croup until he has been brought under the depressing influence of some irritant. Membranous croup is a disease of children between the second and seventh year. Its most prolific predisposing causes are bad hygiene, exposure to cold, debility, heredity, and anything that would lower the general nervous and vital tone of the body.

The True Cause.—The great similarity between true membranous croup and diphtheria, and the fact that it is most common during epidemics of the latter, has led some authors to claim that it is due to a specific microbe, similar to or identical with that of diphtheria. This being the case, it is contagious.

[1] Quiz lecture delivered October 22, 1891, in the Medico-Chirurgical College.

SYMPTOMS.

It is gradual in onset. Child is cross, fretful and slightly feverish; has a hoarse cough; anorexia; disturbed sleep, and constant thirst. The cough soon becomes ringing, and is accompanied with slight dyspnœa. Breathing is stridulous and voice husky. Tongue is coated. Examination of the pharynx, tonsils, and posterior nares shows a few white or ashy spots. The fever gradually increases, and paroxysms of marked dyspnœa, followed by a period of repose, occur. The slightest noise brings on a paroxysm. On the second or third day dyspnœa is so marked that the child is almost cyanosed. It grasps at its throat; head is thrown back; muscles of respiration are prominent; epigastrium retracted; pieces of membrane are occasionally coughed up or vomited; pulse is weak; eyes sunken and staring; cold extremities; gradual coma and death from asphyxia; carbonic acid poisoning or complications of pneumonia or bronchitis on the sixth or seventh day.

Favorable cases are indicated by a gradual amelioration of symptoms; coughing up large pieces of membrane; gradual return of voice; lessening of fever, and slow convalescence. Usually followed by bronchitis and temporary paralysis of the vocal cords.

PATHOLOGY.

An irritant (possibly a germ) produces congestion of the laryngeal and superior tracheal mucous membrane; causes transudation of serum, proliferation of cells and diapedesis of leucocytes, which gradually elongate and form fibrous cells and tissue known as false membrane. This membrane covers and occludes the larynx, pharynx (at times), and superior portion of the trachea and often extends into the bronchial tubes. When removed, small bleeding points are left. Parts are swollen and red. Lungs often present a condition of pneumonia, emphysema or bronchitis from the "cupping glass action" exerted by forced efforts at inspiration. The kidney, liver, spleen and brain are congested. The blood is thick and dark in color.

DIAGNOSIS.

Laryngismus Stridulus.—First and second year. Sudden onset at night, with no prodromes; lasts but a few minutes. No fever. No expectoration. Croupal breathing during the attack. Usually no sequela. Death very rare.

Catarrhal Croup.—Second or third year. Sudden onset at night, with catarrhal prodromes. Lasts from one to three days. Slight fever during the attack. Mucous expectoration. Croupal breathing during the attack. Slight bronchitis complicates or follows. Death comparatively rare.

Membranous Croup.—Second to seventh year. Onset is gradual, with long prodromes. Duration, from four to six days. Constant high fever. Expectoration of false membrane. Constant increasing croupal breathing, with frequently recurring paroxysms of marked dyspnœa. Complicated by bronchitis, pneumonia or emphysema. Most cases die.

PROGNOSIS.

Recovery, in true membranous croup, is rare. Catarrhal or false croup is too often mistaken for true croup; hence, the unreliability of data at our command.

TREATMENT.

Whether the disease be of diphtheritic origin or not, the accepted treatment for one answers and is the same as that used in the other.

Onset.—Put the child in bed between blankets; insist on *absolute quietness;* keep the room at a uniform temperature, and the air constantly moist with steam. Quinine bisulphatis (gr. ij) every two or three hours, with hydrargyrum chloridum corrosivum (gr. $\frac{1}{100}$ to $\frac{1}{60}$). Some practitioners prefer the use of hydrargyrum chloridum mite. Constant inhalations of medicated steam (oleum eucalyptol and tr. iodini comp.); applications of heat or cold to the throat in the form of compresses. If paroxysms are very frequent and child very restless, give small doses of pulvis opii et ipecacuanhæ *during the first stage only.* Full doses of pilocarpine are said to abort; but sufficient statistics can not be obtained to speak positively.

Second Stage.—Continue inhalations of steam; administer quinine and hydrargyrum in small doses. Solvents for the false membrane are of little value. Sprays of lactic acid, peroxide of hydrogen and soda bicarb. are recommended. The spray of hydrogen peroxide should be used at intervals of every half hour or every hour, if it does not produce too much excitement of the paroxysms. Two formulæ are strongly recommended for the throat affection, as follows:

℞.—Potassii chloratis..... ℥j.
Acidi hydrochlorici U. S. P. (not dilute)..... f℥iss.
Misce et adde.
Tr. ferri chloridi..... f℥ij.
Aquæ .....q. s. ad f℥iv.
Misce.—Signe. One teaspoonful (undiluted) every two hours.

"If the patient wish to take a swallow of water first, it may be allowed; but none with or after the medicine, as the object is to allow as strong an affect as possible on the diseased throat." (*Med. World*, Vol. VI, No. 1, page 10.) This formula answers best when the pharynx is involved. It may be used as a spray, and can be classed under the head of severe medication.

Another formula is that recommended by a physician in THE TIMES AND REGISTER for the cure of diphtheria, and is equally efficacious in membranous croup:

℞.—Potassii chloratis..... ℥j.
Tr. myrrhæ..... ℥iij.
Acidi Carbolici..... gtt. iv.
Mel. despumat..... ℥iv.
Aquæ.....q. s. ad. f℥iv.
Misce.—Signe. Give fifteen drops every half hour, and use as a spray at intervals of fifteen minutes, night and day, until relieved.

"* * * or if the mixture smarts unpleasantly in the mouth or throat, then the solution of chlorate of potash should be changed for lime water. * * * Diphtheria grows best while the patient sleeps, and to be successful *do not lose one dose* day or night." * * *

Failing in this, tracheotomy or intubation becomes necessary. See that the tube is always kept clear, and accomplish this by means of a feather or small brush. Sustain the strength by most nutritious diet, given in small quantities at frequent intervals, and tonics. Aconite, aqua calcis, bromides, ammonium and emetics are all too depressing and of doubtful utility. Emetics, remedies that have been greatly abused, have their place; but why use them on every occasion? They only sap the little patient of that much strength and vitality that will be needed to tide them over the later stages. Only when there is a large mass of flapping, loose membrane, is one justified in giving an emetic and, even then, its utility is doubtful.

Third Stage.—When recovery is imminent, the patient must be sustained, as before, on best diet and tonics. Always watch the condition of the heart, and let it be the guide. Remove intubation tube as soon as it can be safely dispensed with. Prevent exposure and treat all complications and sequela promptly. Above all other hygienic measures, see that the patient is isolated, and that all expectoration and cloths used about the patient's throat and mouth are promptly burned.

The treatment of this disease, up to this time, has been rather unsatisfactory, and, if your patients do not respond promptly to your treatment or recover, there is no need for discouragement. On the other hand, put forth your greatest effort to follow those lines of treatment based on the antiseptic theory, and follow strictly rational therapeutic, hygienic, physiological and dietetic measures, using your own best judgment in the matter at all times. When you have a case of this nature, it is your duty to inform the parents of the gravity of the case, as it will be unwise for you to hold out any very favorable prognosis.

BRYN MAWR, PA.

DIPHTHERIA.

By HERMAN D. MARCUS, M.D.

NONE of the infantile diseases are more dreaded by both parents and physicians than diphtheria. Appearing as it does in the form of some minor complaint, such as a simple sore throat, it suddenly develops itself as one of the most fatal diseases of childhood.

During the year 1855, the attention of the medical fraternity was drawn to an epidemic in Paris and Boulogne, which epidemic soon spread to this country (1856), and England (1857). At that time diphtheria was unknown, and Bretonneau, of Tours, gave it its name on account of the peculiar membrane covering the parts affected. Later on the name "cynanche contagiosa" was proposed, but failed to become universal.

The etiology of diphtheria, though often discussed, is still unsettled, and though the germ theory is very prevalent it has not been universally accepted.

Klebs and Lœffler have succeeded in isolating a bacillus found in the diphtheritic membrane, and Roux and Yersin found through experiments on guinea-pigs (*Annales de l'institut Pasteur*) that subcutaneous injections of cultures of this bacillus give positive results. Oertel and Buhl described a micrococcus in the diphtheritic layers, while Rause (Cologne) claims the discovery of a micro-organism—mucor salicinus—which he believes to be the true cause of diphtheria.

So far it seems most probable that the Klebs-Lœffler bacillus is the causation of this disease, though this theory is by no means universally accepted.

Diphtheria is a *local* infection of the throat and tonsils, accompanied by a membrane involving the deeper layers. This membrane varies in thickness from one-twentieth to one-eighth of an inch, and consists of epithelial and granular cells. The neighboring lymphatics become enlarged, the bronchials contain more or less muco-purulent matter, the lungs may become affected, thereby causing pneumonia or collapse. It is a highly contagious and infectious disease mainly affecting the children, and is chiefly predisposed by changes in the weather, bad hygiene, misasmatic surroundings, and follows epidemics of eruptive fever.

The onset is generally sudden. Prodromes may be present, such as headache, drowsiness or malaise.

The period of incubation varies from twenty-four hours to six days.

The first symptoms are sore throat and fever, which seldom goes above 103°. On inspection the throat presents a dry, red, angry-looking surface; the tonsils are enlarged; the patient complains of pain around the angles of the jaw, difficulty in swallowing and anorexia; the pulse is slow, thready and irregular, and cardiac murmurs may become distinct. Soon total inability to swallow, weakness, anæmia, and prostration may be observed. After a few hours or a few days the throat is seen to be covered by small white spots, which develop into the characteristic yellowish or grayish mucous membrane.

Diphtheria may spread to different adjoining parts and thereby cause most serious complications.

It may spread upward into the nose, downward to the larynx, and even to the œsophagus, forward into the mouth, into the blood, the eye, the ear, in fact through every sinus leading from and to the pharynx. Epistaxis, hemoptysis, dyspnœa, fetid discharges from the nose or ear, may greatly aggravate an attack. The tonsils and uvula may become thus enlarged so as to seriously impede the functions of the respiratory apparatus, and thereby greatly endangering the patient's life. Albuminuria and diphtheritic affections of the skin have been variously observed.

The sequelæ of this disease are in the first place paralysis, which does not confine itself to the pharyngeal or laryngeal muscles, but may extend to other muscles of the body. The feet and legs may become thus affected so as to cause unsteady gait, etc. This phenomenon (paralysis) is most probably due to an anterior polio-myelitis. Other sequelæ may be permanent renal diseases, debility and anæmia.

The duration may vary from three days, or even less, to two or three weeks. Relapses may occur.

The prognosis is more or less always grave. Children have less chances of living than adults. Implication of the air passages, extensive sloughing of the throat, epistaxis, copious discharges from the nose and ear, feeble and rapid pulse, uræmia, albuminuria, and nervous disturbances are factors augmenting the gravity of a case. As regards to prognosis Dr. Waugh (TIMES AND REGISTER) says:

"The principal element in the prognosis of diphtheria is to be found in the attending physician. If he is a believer in the strictly local nature of the disease, and in the importance of efficient and early local treatment, the chances of recovery are good."

Diphtheria being a local disease, our first object must be the use of remedies locally applied. Constitutional treatment is undoubtedly of value, but our main efforts must lie in local medication. Just as little as we would expect an open wound to heal by constitutional treatment, just as little can we have any success in combating this disease without applying such remedies *locally* as would most likely benefit our patients. Constitutional treatment may be indicated to counteract arising complications, but to treat the disease proper *only local* medication will lead us to success.

The methods of treatment and the variety of remedies proposed for the treatment of this disease are manifold. Dr. Waugh recommends his trichloride mixture as follows:

℞.—Potassii chloratis..... ʒi
Ac. hydrochlorici dil..... ʒiss
M. et adde:
Tr. ferri chloridi..... ʒii
Aquæ,
Syrupi.....āā, q. s. fʒiv
M. Sig.—One teaspoonful p. r. n.

Seibert (*Archiv. of Pediatrics*) is a strong advocate of local submembranous treatment. His object is to bring very strong solutions in direct contact with the deep parts of the mucous membrane. He uses chlorine water (U. S. P.) and a specially constructed syringe, which terminates in five or six short sharp-pointed needles. After making the injections he prescribes a gargle consisting of 15-30 grs. of tincture of iodine and 10 drops of concentrated carbolic acid to 4 ounces of water; a teaspoonful to be used for swallowing and gargling alternately every 15 minutes. If the child is too young to gargle, 5 drops of carbolic acid are added to the mixture, and a half teaspoonful administered every half hour.

Loeffler recommends gargles of corrosive sublimate solutions (1-1000), 3 per cent. carbolic acid dissolved in 30 per cent. alcohol; painting of the throat frequently with 5 per cent. carbolic acid, 2 per cent. bromine and 1 per cent. chlorine solutions.

Manning (*British Medical Journal*) advises the following treatment: A syringe holding 4–6 ounces is filled with a solution of 4 parts pulv. boracic acid and 3 parts glycerine. Heat and mix thoroughly. A tablespoonful of this is dissolved in a pint of water. The nozzle of the syringe is directed well back of the tongue and forcibly emptied, receiving the water which rushes out in a small basin. This to be repeated every two or three hours.

Van Wyck (*Med. Record*) divides the diseases into five stages, and uses appropriate remedies for each stage. His *modus operandi* is to administer 3-10 grs. of calomel combined with 2 grs. of bicarbonate of soda during the stage of invasion, to be repeated every fourth hour until stools are colored green. He then sprays the parts with peroxide of hydrogen 1-3 parts of water, and when the membrane is limited to a circular area he paints the parts with peroxide of hydrogen (full strength) taking care not to get it on the adjoining healthy tissues. The spraying is repeated every two hours, the painting three times daily.

F. Henmann gives first a purgative dose of calomel and after effect is established he prescribes.

℞.—Metallic iodine..... gr. v.
Alcohol..... ʒv.
Chloroform..... ʒss.
M. Sig.—External use.

After washing the pharyngo-nasal mucous membrane with lime water the mixture is applied, to be repeated after six hours. Energetic perspiration is then provoked, the patient being allowed to perspire for two or three hours. He is then rubbed dry and stimulants are administered. The next day a simple application of the iodine is sufficient. The third days' treatment constitutes the same as the first days, and so on.

Dr. Cohen, of this city, advocates the use of iced cloths to be applied over the neck, and to extend to the ear in case respiration is interfered with.

Iodoform, salicylate of soda, nitrate of silver, and other remedies have been recommended at different times.

Tracheotomy or laryngotomy may be at times the only means of saving the patient's life, and no delay should be suffered to occur to perform the operation when indicated.

The general management requires, in the first place, perfect isolation of the patient in a moderately heated room. Cleanliness and the use of disinfectants about the room, bed clothing, etc., are of the utmost importance.

Supporting treatment must be resorted to from the beginning, and, though alcoholic stimulants should not be used at once, still they must be freely given when indications require its use. Good, nutritious liquid food should be regularly given, and if the patient is unable to swallow, enemata must be administered. Strict attention must be paid to any complications arising in the course of the disease, and any indication of any arising must be promptly combatted by proper medication.

A change of air, good diet and tonic treatment will hasten convalescence.

EUROPHEN.[1]

(O-cresoliodide.)

THERAPEUTIC OBSERVATIONS.

By A. NOLDA, M.D.,
German Baths Physician at Montreux and St. Moritz Bath.

AT the beginning of this year the Farbenfabriken, formerly Friedrich Bayer & Co., Elberfeld, sent to the clinics and hospitals a new preparation of iodine, o-cresoliodide, which was to prove a substitute for iodoform. Thorough trials, which were instituted by Dr. Eichoff, in Elberfeld, and by Dr. Peterson, in Wurzburg, demonstrated the correctness of the claims. These trials were based upon the results of the bacteriological and pharmacological examinations conducted by Dr. Siebel in the physiological laboratory of the Farbenfabriken. The details thereof will be found in the reports of the physicians.

Europhen is a very fine yellow, somewhat sticky powder, which is to be protected from light and moisture. It is easily soluble in ether, alcohol, chloroform, collodion and oil; insoluble in water and glycerine. It has a moderately strong, not unpleasant smell. The amount of iodine contained is 28.1 per cent.

After the non-poisonous nature of the preparation had been established in the laboratory, and the clinics had given the indications for its therapeutic use, I had no hesitation in making a trial of europhen in my practice. Only the pure powder was used.

At the beginning of August a number of cases of ulcus molle came into my hands for treatment. If one case of venereal disease occurs in a health resort, the physician can always be certain that at the shortest notice a considerable number of patients of all classes, affected by the same disease, will present themselves to him. The supply in such places is generally small, the demand great. As Eichhoff himself was able to treat but two cases of ulcus molle with europhen "because lately in this region it has appeared rather seldom," I will enter upon it somewhat more minutely.

Altogether six cases of chancroid (among them one girl) were treated with insufflation of europhen powder, and carefully noticed. The ulcers were washed out morning and evening with corrosive sublimate 1–200, carefully dried with cotton, insufflated with europhen powder. In four of these cases,—these were patients taking the baths, who were able to take all precautious—the ulcers were healed and perfectly cicatrized in seven to nine days. In the other two cases, the cure took twelve to fourteen days respectively, as the vocation (chambermaid and coachman) afforded no bodily rest nor chance of sparing one's self.

[1] Special reprint from the *Therapeutic Monatshefte*, October, 1891.

At first I was intending to treat half of the cases with iodoform, and the other half with europhen, in order to thus have a basis of comparison as to the healing effect of both preparations. I changed my mind, however, for the following reasons:

1. The several cases presented a very differing picture, as regards extent and depth as well as the secretion of pus.

2. These comparative examinations are only to be used when the patients can be brought under exactly the same conditions, diet, rest, etc., which is impossible in the treatment of patient who are walking about.

Having had a rather extensive experience with ulcus molle, in Montreux, soft chancre occurs relatively often, in contradistinction to primary syphilitic affections. I found it established by these six cases, that europhen cleanses the ulcers in shorter time, produces better granulations, and leads to quicker healing than iodoform.

The experimental proof is afforded by a seventh case, the clinical history of which must be introduced.

A. K., Italian laborer, twenty-four years old. Visited me during office hours on August 9. The last coitus was at the last part of June. In the region of the frenum of the prepuce is an ulcer, about 2.5 cm. long, and 1. cm. broad, which creates foul smelling pus. Frenum destroyed. Margin of the ulcer moderately infiltrated. No swelling of the glands; no syphilitic roseola. Diagnosis: neglected, ulcus molle.

The large size of the ulcer brought it to my mind to treat one part of it with iodoform, and the other part with europhen, the parts to be of equal size. I chose the half which looked worse for treatment with the new preparation.

The treatment was the following: After the ulcer had been carefully cleansed with corrosive sublimate, 1,200, and dried with cotton, a thin band of cotton was laid across the middle for the purpose of a boundary, and then the right side, the worse looking one, insufflated with europhen, and the left side with iodoform. Bandage, rest in bed. Bandage changed morning and evening.

Six days later, August 15: Beginning of granulations and of cicatrization from the edges. The europhen granulations appear more vigorous.

The further course was such that the surface treated with europhen healed more rapidly, and, on the 26th day of August, was completely and well healed; while in the case of the surface treated with iodoform, the same good result was not reached until the 28th of August.

Europhen, therefore, healed the worst looking part of a fearfully neglected ulcus molle two days quicker than iodoform.

I believe that this experiment is free from reproach, and proves, at the very least, that europhen has just as good an effect as iodoform.

Other cases, also, which were treated with europhen, gave remarkably good results. Three cases of suppurative otitis media, two cases of ulcer crur's, and one hard chancre were especially favorably influenced. I employ the preparation now in all cases in which, up to this time iodoform was indicated. Trials in using europhen in the form of a glycerine emulsion hypodermically in the treatment of gravitating tuberculosis abscesses, could not be instituted on account of lack of material. There has nothing appeared concerning this subject in the previous articles on europhen. According to the exhaustive bacteriological examinations of Siebel, however, europhen appears to possess the same anti-tuberculous effect as iodoform. Trials with this purpose in view would certainly prove of advantage.

The chief advantage of europhen in practice among those who are not confined to the house is its *slightly intense* odor. What must not physician and patient—especially in healthy resorts—undergo if one story, or, perhaps, the whole hotel, is made pestilential by an iodoform treatment? Guests and landlord make remonstrances—the former threaten to move out, the latter will suffer the patient to remain no longer in his hotel, etc. Lesser (in his work on "Venereal Diseases," Leipsic: F. C. W. Vogel) writes, in the description of the therapy of the ulcus molle, as follows:

"A very unpleasant property of iodoform is the penetrating odor of this remedy, which it is impossible by any means fully to suppress."

The experience of other authors, as well as my own, establish the following propositions as to europhen.

I. It is indicated in all cases in which iodoform has hitherto been used.

II. In suppurating ulcers and inflammations, its healing effect exceeds that of iodoform.

III. It has farther the following advantages over iodoform:

1. The non-penetrating and not unpleasant odor.

2. Its low specific gravity (five volumes of europhen weighs the same as one volume of iodoform.)

3. Its inocuousness.

The fullest recognition is to be accorded to the Farbenfabriken, formerly Friedrich, Bayer & Co., in Elberfeld, who have enriched our medical treasury in the last few years by a number of most superior remedies for this splendid new preparation. We hope that the price will be such that europhen can be universally used—not merely in wealthy circles.

Literature which has appeared concerning europhen, a new iodine product. *Therapeutische Monatshefte*, No. 7, 1891.

Eichhoff concerning therapeutical results with europhen in dermatology. *Therapeutische Monatshefte*, No. 7, 1891.

Peterson: Concerning cresoliodide (europhen). *Munich Medicinische Wochenschrift*, No. 30, 1891.

Goldman: Concerning europhen, a new substitute for iodoform. *Pharmaceutische Zeitung*, No. 56, 1891.

ST. MORITZ BATH, SWITZERLAND, SEPTEMBER 1, 1891.

The Polyclinic.

THE POLYCLINIC HOSPITAL.

DIPHTHERIA.

DR. S. SOLIS-COHEN says that each separate case requires the best judgment of the physician, and that we cannot treat diphtheria or any other disease successfully by formulæ.

His treatment is as follows:

Free stimulation, using for this purpose some form of alcohol. He recommends burnt brandy (take a teacupful of brandy, and while it is burning, let it melt a piece of sugar held over it with a fork). Malaga wine is a good thing. Stimulation should be carried to the point of intoxication and no further.

Carbolic acid solution (5 per cent., and sometimes even stronger); hourly inhalations until the urine becomes olive colored, when it should be stopped for twenty-four hours. This effect on the urine must be carefully looked for.

Tincture of chloride of iron for the membrane, applied thoroughly and firmly with a sponge or swab,

This causes the membrane to dry and curl up, so that it is more easily removed. Of course it must be applied to all the diphtheritic patches, or its purpose fails. Tincture of chloride of iron should also be given internally in large doses.

Peroxide of hydrogen solution, 1 part to 3 of water or peppermint water, used internally, and by spray locally, as a germicide. When accessible, Dr. Cohen prefers to use that preparation of peroxide of hydrogen known as ozonic ether.

A gargle, prepared as follows, has been found useful, and used freely by him.

Take ʒij of chlorate of potash, dissolve in hot water and set aside. Then take a ℥vj bottle, put in it ʒvj of clarified honey, and smear the sides of the bottle with it, shaking it well. After this add, teaspoonful by teaspoonful, shaking well after each additional spoonful, compound tincture of cinchona fʒij, and ammoniated tincture of guaiacum fʒij. To this solu tion add gradually the chlorate of potash which has been set aside, shaking the mixture thoroughly, and to this add water q. s. ad ℥vj. Every half hour, or hour, or two hours, the patient should gargle or bathe the throat with a teaspoonful of this solution. Every two hours let him swallow a half teaspoonful or a teaspoonful. Dr. Cohen thinks this is an excellent thing taken early in the case, and is good in sore throat and tonsillitis.

The patient should be carefully isolated in the highest room of the house, from which all carpets and hangings have been removed. Outside of the door should be a sheet saturated with carbolic acid solution, and things should be handed by the attendant on one side of the sheet to the attendant on the other, without themselves passing in or out of the sick room.

PHILADELPHIA HOSPITAL.

I BELIEVE that diphtheria is a local disease at the start, and that the rational treatment of it consists of local applications. It is not always so much a question of the drug as of the thoroughness with which it is applied. The disease does its deadliest work upon the nervous system (and possibly upon the blood). All fatal cases which I have seen have died of heart-failure, some of them quite suddenly. This heart-failure is apparently caused by an overwhelming of the nerve centers and nerves. Respiratory failure from the same cause is also seen. The poison which does this damage is probably the product of the specific microbe of the disease, and the seat of initial and greatest activity is in the local sore.

The best drugs, according to my own observations, are:

1. Calomel.
2. Corrosive sublimate.
3. Sulphur.
4. Tinct. chloride of iron.

The latter can be advantageously joined with chloride of ammonium. I have used with advantage a spray made up of lime, sulphur, eucalyptus and extract pancreatic.

If the heart is weakened by a poisoning of the nerve centers alcohol will sustain it better than either digitalis or strychnine.—*Lloyd.*

FOR NASAL DIPHTHERIA,

Where I have never ventured to employ the strong chlorine-acid mixtures, the nitrate of silver solution, 5 grains to the ounce, injected every four hours, has often answered admirably. But peroxide has been placed in our hands, and for nasal diphtheria it is simply the ideal remedy, penetrating further and doing its work more thoroughly, while it is not apt to injure the delicate structures as does the nitrate. The salicylic solutions have proved disappointing in true diphtheria, though of much more value in scarlatinal angina and coryza.

Whatever be the agent used in these nasal cases it should be employed instantly, when the first signs of coryza appear, though this secretion is very much less irritant than that of an ordinary cold.

In all cases where turpentine is employed as a topical application, or by vaporization, the *Sanitas Oil* is a much better agent. There is some danger of this valuable drug being neglected, since peroxide has attracted so much attention. The same active antiseptic exists in this oil, and in addition the turpentine is an efficient topical remedy, destroying fetor and the microorganisms that cause it, and stimulating in the mucous membrane a tendency towards healthy repair. It has seemed to the writer that this oil penetrates more deeply into the tissues than watery or alcoholic solutions, while glycerine and fixed oils cannot penetrate at all. The sanitas oil may be applied undiluted to the affected surface, and repeated as often as the reproduction of the exudate warrants. The old idea of timing applications should be entirely dismissed. If the exudate be increasing, in one hour, or four hours, or four minutes, a new application is indicated, and very speedy reproduction should be met by increasing the strength of the application.

At every visit the doctor should examine the throat of every member of the household, and he should also enjoin upon them the necessity of using mild detergent gargles, etc., to prevent infection.

DIPHTHERITIC EPISTAXIS,

Is one of the most dreaded manifestations of this disease, and recovery from it is, to say the least, quite exceptional. Several years ago I treated a case of this sort by injecting into the nostrils a solution of chromic acid. That child recovered; the first in many years' practice. Since this period I have had but few cases of the kind, thanks to the solicitude with which I have watched for the first signs of nasal implication, and the untiring diligence of my nurses. But every case of diphtheritic epistaxis has been treated with chromic acid, and every one has recovered.

DIPHTHERITIC PARALYSIS,

Allows of a favorable prognosis. One case, of by no means severe diphtheria, was followed unexpectedly by paralysis of all four limbs, neck and body; in fact, the child could breathe and eat, but that was all. Unfortunately she did not recover entirely, but is still, years after the attack, unable to walk without support, to articulate plainly, or to use her hands freely.—*Waugh.*

IN the treatment of diphtheria I have for many years relied almost wholly upon the muriated tincture of iron combined with the sodium chlorate. Later I have usually added the sodium chloride. My formula is sod. chlorate, sod. chloride, of each 2 drachms; tinc. chloride ferri, 3 drachms; syrup limon and water, of each enough to make a 5-ounce mixture. Dose, one teaspoonful every two, three or four hours, according to the condition of the case.

In many instances I have the parts sprayed with this mixture every two hours.—*Atkinson.*

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DIPHTHERIA.

IN every newspaper we read, we find notices of the appearance of diphtheria in some locality, and of the sad fatalities occasioned by this dreadful disease. Whole families of children are swept away in a short time, and the proud and happy parents, who look upon their little ones gathering about their table on a Sunday, may be deprived of all before the end of the week; for it is characteristic of diphtheria that when once it enters a house, especially in the country, there is no safety for the little ones short of instant flight. Children reared in the pure country air have less resisting power than those who are seasoned against many diverse noxæ by breathing the atmosphere of the crowded city. But even here we learn to dread diphtheria. Who of us is there but stands in fear of this foe; who has not in his memory the recollection of defeats after pitched battles with it? When we hear a physician boast of his ability to "cure diphtheria," we pity him. He will be wiser some day; for it is another characteristic of this disease that it appears in a mild form, readily yielding to any remedy that may happen to be directed against it; until the doctor begins to gather confidence in his power to control it, when suddenly it appears with a malignancy that baffles every effort, when, utterly defeated, the unfortunate doctor sees his lambs slaughtered hopelessly before his eyes, while he stands impotent to prevent the sacrifice.

Nevertheless, there is much to be done for even the worst forms of diphtheria. Starting from the firm ground of a correct theory as to the pathology, we can nearly always accomplish our object. The disease is primarily local—a germ disease—spreading in all possible directions from the original focus, giving rise to constitutional symptoms in three ways: first, as due to the local lesions; second, as caused by the absorption into the blood of ptomaines generated in the diseased tissues of the mucous cavities, such as the nose; third, as dependent upon the actual invasion of the blood by the germs of the disease themselves.

Local remedies without end have been lauded in this affection. Many of them are valuable; *any* antiseptic is valuable, provided it be used *strong* and *often*. Strong enough to destroy the false membrane and its contained bacilli. Often enough to keep down the renewal of the growth, and preserve the aseptic condition of the part. The growth recurs with marvellous rapidity; it seems to extend and thicken visibly. Every treatment reported as successful in bad cases is notable from the frequency of the applications. In France, one worthy man awakes the child every quarter-hour for the swabbing. "Sleep is important, but diphtheria sleeps not; and during a half-hour's peaceful rest the dead-line is passed, and the patient's doom is sealed."

Of the local remedies, the bichloride has, for some years, enjoyed the preference, though many practitioners have adhered to Watson's teaching, and preferred chlorine. Years ago we satisfied ourselves, by repeated trials, that neither sublimate nor any other agent then in use could compare with nascent chlorine in its power over diphtheria. Some cases die under the chlorine treatment, as they will under any strictly *surface* local treatment, because the disease sometimes gets into localities whither we cannot follow it with the antiseptic. For such cases we have never possessed a remedy, and probably never will.

Of recently-introduced local remedies, two have been highly commended: peroxide of hydrogen and sulpho-calcine. With each of these the writer has saved lives, in cases where the chlorine mixture affected the healthy tissues so strongly as to preclude its use.

In the matter of prophylaxis, there is hope for better things. Diphtheria haunts certain localities, certain houses, and the enforcing of good sanitation will do far more, by preventing the disease, than medicine will in curing it. An outbreak of diphtheria should always be followed by a sanitary inspection, which should not be considered complete until the cause of the trouble has been discovered and obviated. Then we should have no such history to record as that of Gallitzin, or as those of two houses known to us in Philadelphia, which have for years caused the death of each family of children occupying them. When sanitary science receives its due share of attention in medical colleges, and the reports of the State Boards of Health are placed on the curriculum of the public schools, diphtheria will become rare.

TREATMENT OF TYPHOID FEVER.—A good authority in Paris recommends the following treatment for typhoid fever:

℞.—Salicylate of bismuth. ..... gr. x.
Naphthol A. ..... " viij.
For one wafer, night and morning.

℞.—Sulphate of quinine..... gr. xx.
Extract of cinchona..... ʒj.
Decoction of valerian..... ʒiv.
To be administered by the rectum at four in the afternoon, each day. Besides which, three enemas of cold water during the day. Bordeaux wine and beef-tea.

Letters to the Editor.

DIPHTHERIA.

THE following method of treating Diphtheria has been so almost constantly effective in my hands for seventeen years, that I have had no occasion to accept anything new, however scientific or complicated:

Begin with an efficient calomel purge. After purgation: ʒj–ʒij (according to age of patient) of Watson's Chlorine Mixture, diluted with an equal portion of water when taken *every hour;* to be used also as a gargle as often, if patient is not too young to gargle.

Once or twice during the progress of the case (give at night only) pulv. ipecac. gr. ij–iv., potass. chlor. gr. ij–viij.

A thin broad slice of fat bacon bound in front and at the sides of the neck has always seemed to lessen tumefaction of the large lymphatic glands, perhaps by maintaining local sweating.

Pay but little attention to feeding, for the reason that this treatment will likely be so speedily curative that patient will see to the feeding himself. Have not met with heart failure, paralysis nor other sequel since using the above simple way of treating this justly dreaded distemper.

P. S.—*Watson's Chlorine Mixture:* Place gr. v. potass. chlor. in a 6-oz. vial, add gtt. x ac. muriat. C. P. When effervescence has ceased fill the vial gradually with good ordinary water. This mixture is not poisonous.

H. D. TAGGART.

AKRON, OHIO.

THERMIC DIARRHŒA.

IT is customary to write articles incident to the approaching season; but I believe it would be better if we would write upon the diseases with which we have just been contending, as the seasons close, for we will write with more life, more zeal, and more correctness. Every peculiar complication, every special experience, and every new prescription would then be fresh in our minds. We would not be writing from the coldness and forgetfulness of time. Then, as we have just closed the heated season, in which are developed the bowel diseases of children, let me write now, for in that infant lies wrapped the future man.

No subjects come to me with a deeper interest, for through these comes a large proportion of infant mortality. We look for their bowel complaints as regularly as we look for the seasons, in all densely-populated districts, in large cities in the temperate zone, in the northern half of the United States, and in corresponding portions of Europe. The first week of high temperature that runs through day and night without abatement, these complications begin. In localities where the high temperature is not continuous day and night, there is no great prevalence of these diseases. In the cities where the breezes from the sea come at night and cool the atmosphere, there is not a high rate of mortality or sickness from bowel affections in young children; but wherever the reverse is true, and the night is not modified by the cool influences of neighboring oceans or seas, and the temperature continues high, day and night, for a period exceeding five or six days, you are certain to find a prevalence of these affections. It is not high temperature, merely, but continuous high temperature.

It is at this period that the bowel complaints of children begin to prevail. Teething is not the cause of these affections. As many children get teeth in January as July; and yet you cannot find a child dying with bowel complaints in January, but hundreds will be buried in July, and hundreds more in August.

Some think it is because they get bad vegetables; but it is not. They are not old enough to eat vegetables; they live on the mother's milk. This continuous high temperature acts upon the vaso-motor nerves to diminish the influence on the circulation in the membranous surfaces, both externally and internally, and puts into an atonic condition the vessels of the whole interior of the body. It is this impairment of the general force of affinity and this diminution of the activity of the vaso-motor nerves, that bring about the looseness of the bowels. Let me urge the necessity of mothers bathing their babies during these hot months. Bathe them regularly every morning and evening in water cool enough to act as a stimulus on the vaso motor nerves and induce a better tone in the vessels of the membranous surface; most especially bathe the spine.

Thermic diarrhœa is a form of disease which I have seen but few times in my experience of a quarter of a century. In this disease the heat and thirst are so intense that the little sufferer will grasp and drink with the utmost greed the bitterest draught. I have seen these little sufferers tearing the hair from their heads, the gums from their teeth, and actually chewing the ends of their fingers almost off; biting the nurse, scratching and clawing, moaning and crying, like some maddened wild beast.

This is not alone a thirst of the nervous papillæ of the mouth and fauces, showing a suppression of the salivary and mucous secretions. It is not alone a cry of the stomach; but it is a thirst, an internal sensation, an instinctive want arising from every organ and every tissue of the body. Such patients will die unless they are speedily relieved. To do this I strip and put them into a bath of warm water to their necks, administering every minute or two, as a drink, a teaspoonful of cold water, into a glass of which the white of an egg has been stirred, with the addition of a little sugar and essence of cinnamon. This, diligently administered, will give prompt relief and sweet sleep. These paroxysms may return; but they may be dispelled as before, and the child restored to health in a very few days.

When we consider that 16,000,000 of children under the age of five years die every year, we cannot be too earnest to know our business. One of the great necessities of our profession is to know our pathology, for without this we cannot expect to make a rational prescription, or to be crowned with satisfactory results.

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Book Notices.

AN ABSTRACT OF THE SYMPTOMS, with the latest dietetic and medicinal treatment, of various diseased conditions. The food products, digestion and assimilation. New York: Published by Reed & Carnrick, 447 and 449 Greenwich street; 1891.

This is an account of the new preparations put upon the market recently by the enterprising firm named. Of the products placed in the hands of the profession previously by Reed & Carnrick, not one

has failed to come into general use and to win the commendation of the profession. Of those now presented some look very promising; others problematical; all are worthy of a trial. One of these sulpho-calcine, has been reported an exceedingly valuable local remedy in diphtheria, by a number of competent observers.

The Medical Digest.

TREATMENT OF DIPHTHERIA.—(From *La Pratique Journalière des Hopitaux de Paris*).—See to the microbe, but do not forget the organism and its reactions.

I. *Régime.*—Make alimentation the object of constant preoccupation, and adapt it to the age of the little patient. Milk, eggs, soup, beef-juice, can be absorbed in the liquid form, and should be given cold. Add to this alcohol, well diluted, to avoid irritating the stomach. If the children refuse nutriment, have recourse to the sound, and be sure that it has penetrated the stomach before pouring in the liquid.

The temperature of the room should not be below 64° to 68°, and should not rise much above this.

II. *General Treatment.*—Facilitate the elimination of the toxic products absorbed. These disappear from the economy by many routes. Some are retained or destroyed by the liver; others burned up by the blood; finally, the larger number are eliminated by the kidneys. We cannot act upon this function of the liver; to increase the destruction of the poison by the blood, increase the absorption of oxygen by causing this gas to be inhaled. We can act more easily upon the renal emunctory by milk, by the ingestion of liquids, and by caffeine, which we administer by the mouth or by the subcutaneous way.

III. *Prophylaxis.*—Three agents of disinfection: heat (in diverse forms), antiseptic liquids, and gaseous fumigations.

The most radical measure for the destruction of contaminated objects is their incineration. Have recourse to this in the freest manner. It will be easy, if one makes it the rule, to clothe the patient in linen of little value. This process being inapplicable for the sheets, pillows and mattress, etc., a means of certain efficacy to disinfect these objects is to place them in a stove with vapor superheated and under pressure. The temperature reaches 239°, and no germ, not even the bacillus subtilis, can resist such a heat. The stove of Eneste and Herscher is of practical value. Fifteen minutes suffices to purify an ordinary mattress, and twenty minutes to dry it, without doing it any harm.

In default of the stove, place the contaminated clothing in a liquid antiseptic. Of all the antiseptics proposed, the only truly efficacious ones are the phenols and compositions of that family, the cupric salts, and especially the mercurial salts.

—*Bouchard.*

I. *Local Treatment.*—Employ antiseptic douches with hydrocele syringe, or with an irrigator. Seat the child upon the mother's knees, a basin under the chin; bend it forward and hold its mouth open. Introduce the nozzle of the irrigator into the mouth, under the upper teeth, and inject from below upward. The liquid laves the tonsils and the pharynx, and escapes without entering the air-passages. Employ a solution of *coal-tar saponins* (liquor carbonis detergens?), prepared in strength to be diluted by four parts of water when used. This is preferable to the solution of carbolic acid, 1 to 1,000, or the boric acid solution, 40 to 1,000. Recourse can be had to the sodium salicylate solution, 30 to 1,000; salicylic acid, 3 to 1,000; or resorcine, 10 to 1,000.

Repeat the antiseptic injection *every hour, day and night.* Besides, apply frequently to the swollen glands in the neck, iodized pommade, 6 to 100.

II. *Internal Treatment.*—An emetic at first; then, to prevent the infection, resorcine, in doses of 1½ to 3 or 4 grains, according to the age of the patient, given in 3 ounces of gummy julep.—*Bouchut.*

I. *Local Treatment.*—1. Continual pulverizations of carbolic acid in the sick-room, after the method of Renon.

2. Every hour or two, according to the gravity of the case, *irrigations*, by the mouth or by the nasal passages, with a salicylic acid solution, 1 or 2 to 1,000.

3. Frequent paintings of the affected parts (every hour or two, alternating with the irrigations), by the aid of a brush dipped in the following solution: Salicylic acid, 4 parts; alcohol, at 90°, 40; distilled water, 80. With this solution touch *frequently* the false membranes, but without scraping, so as not to excoriate the mucous membrane. More consistence can be given to this solution by adding alcohol, making it 1 part of salicylic acid to 10 each of alcohol at 60°, distilled water, and glycerine.

Internal Treatment.—Give salicylic acid in cachets, of 7½ grains, four times daily; for adults, give Todd's mixture, with the addition of 7½ or 15 grains of salicylic acid. For infants, use the following formula: 15 grains of salicylic acid to 4 ounces of Todd's mixture, with 4 to 8 drachms of brandy. Of this, a dessertspoonful every hour.—*Henri Huchard.*

Local Treatment.—Early sterilization of the false membranes is the first indication. The ablation of these, as far as it is possible, permits this sterilization to be affected more surely. The best parasiticides are tannin, carbolic acid, carbolate of soda and carbolated camphor. These parasiticides and antiseptics can not only be applied, but they can be absorbed from the pulmonary surface in the form of pulverized solutions and of vapors.

General Treatment.—Relieve the general condition by stimulants, to which may be added arsenic, given subcutaneously.

Prophylaxis.—The antiseptics, in vapor, can, in a certain measure, preserve the persons who care for the sick, and the children who cannot be banished.

—*Constantin Paul.*

Local Treatment.—Antiseptic paintings, pulverizations, gargles and irrigations.

Paintings, frequent, with olive-shaped brushes; a dry one first, employed with a certain force to detach the exudates should precede the topical application of the following: Salicylic acid, gr. xv; alcohol, q. s.; glycerine, ʒx; infusion of eucalyptus, ʒxijss. Repeat the painting hourly during the day. If the pseudo-membrane resists, substitute the following: Glycerine and perchloride of iron, equal parts.

Irrigations. — With each painting, irrigate with boric water, 2 per cent., or with lime water. For this employ a siphon, or better, a reservoir of glass, furnished with a tube. It is often impossible to employ irrigations with very young children.

Gargles.—These are only possible when the children are old enough. They should be of boric water or coal tar solution.

Pulverizations.—Useful for very young children, repeated 5 or 6 times a day, with carbolized water,

thymol solution, or tincture of eucalyptus. Produce antisepsis in the sick-room by carbolic spray or turpentine vapors.

Resolvent Pommade.—For the painful adenitis, employ this. Here we can use iodine pommade and belladonna.

℞.—Ext. belladonnæ..... gr. xlv.
Potassi iodidi..... gr. xxx.
Petrolati..... ℥j. M.

Régime.—Nourish the patient.

Internal Treatment.—1. Alcohol, 1 ounce to 1½ daily; cinchona, coca, and especially kola.

2. Give the perchloride of iron, gtt. x–xx hourly, or better, if the child is over twelve years old, try copaiba and cubebs in full doses:

℞.—Cubebæ..... ℥ij.
Copaibæ..... ℥ij.
Ferri subcarb..... ℥i.
Bismuth subnit..... gr. xv.
Divide into four boluses, to be taken during the day.

—*Jules Simon.*

Local Treatment.—Spray with the steam atomizer, or evaporate on an oil stove or an alcohol lamp, antiseptic solutions like the following: Thymic acid, gr. v; phenic acid, gr. xx; alcohol, gr. c; distilled water, ℥xiv, gr. xxxv. Besides their antiseptic action, these sprays keep the air moist, and favor the detachment of the exudate.

Internal Treatment.—Prescribe the medicaments with indirect action, which cause elimination by the buccal glands. Such are the chlorate of potassa, benzoate of soda, and bromine.

℞.—Bromi pur..... gtt. iv.
Potassi bromidi..... gr. viiss.
Syrupi..... ℥j
Aquæ destillatæ..... ℥v.
M. S.—A soupspoonful every two hours.

Use copaiba and cubebs only with reserve, on account of the gastro-intestinal irrritation and diarrhœa that follow their employment —*Sevestre.*

Local Treatment.—1. Ablation of the exudates. Do this with the greatest gentleness, without scraping. Take away all the false membrane, but be careful to cause the least possible lesion; energy need not preclude tenderness. To clean the throat, give the preference to brushes of swanskin (*molleton*) with a cotton mop, or a pencil of soft horse-hair gathered into a brush.

2. Paint the bucco pharyngeal mucosa with the following mixture:

℞.—Camphoræ..... ℥v.
Ol. ricini..... gr. ccxxv.
Alcohol (90°)..... ℥ijss.
Acid. carbolici cryst..... gr. lxxv.
Acid. tartarici..... gr. xv.—M.

The castor oil, soluble in the alcohol, gives an absolutely limpid material. Glycerine is a bad vehicle.

3. Repeat the ablation of the false membrane, and the application of the carbol-camphor mixture, every three or four hours; even oftener if the exudation is rapidly reproduced.

4. In the throat, employ, every two hours, carbolized irrigations that will carry away the pseudo-membranous débris, and, at the same time, afford an antiseptic state. With young children, who bear irrigations badly, practise them by force. Hold the child with the head bent forward, so that they will not swallow the carbolized water. The mouth should be kept open by means of a bit of wood, forced between the dental arches. The pain is almost nothing.

5. With adults, in place of irrigations, employ carbolized gargles, 1 per cent.

Internal Treatment.—If general infection exists, give anti diphtheritic agents: arseniate of strychnine, and calcium sulphide.

Régime.—Nourish the patient.—*Gaucher.*

Practise ablation of the false membrane and touching the throat. The antiseptic liquid is carbolic acid:

℞.—Acid. carbolici cryst..... gr. lxxv.
Camphoræ..... ℥v.
Alcohol (90°)..... ℥ijss.
Glycerini pur..... ℥vj, gr. xv.—M.

Replace the oil of Gaucher's formula by glycerine; the inconveniences that the latter may cause are much less than those of the oil. In effect, oil will not *wet*, and, by varnishing the mucous surface, it prevents the penetration of the carbolic acid; besides, the solution is weaker.

Paint every three or four hours, according to the abundance of the membranes. Make irrigations of boric acid, 40 to 1,000. Repeat these vigorously every two hours, whatever the benignity of the diphtheria. Boric acid recommends itself especially by its harmlessness. Other solutions may be employed, provided they are not too strong, and that they have enough acidity. The diphtheritic poison has difficulty to accumulate itself in an acid medium; in all cases, the toxicity of its products is much less in an acid than in an alkaline medium. These irrigations or lavages act besides in preserving the cleanliness of the mouth and back of the throat.—*Hutinel.*

For Nasal Diphtheria.—Irrigate the nose with walnut-leaf water, or boric water. Apply a pommade of sublimed and washed sulphur, 1 drachm, to axunge, 1 ounce.

When the false membranes are located upon the lips, nitrate of silver, justly abandoned for pharyngeal diphtheria, answers well; in this case a light daily cauterization produces a good effect.

If the exudate appears on the skin of the cheek, where the child has had an excoriation, such as impetigo, employ a dressing of finely powdered iodoform.—*Jules Simon.*

DISCUSSION ON DIPHTHERIA.[1]—*Diphtheria.*—A discussion on this subject was opened by Dr. Seaton, who said that the cases admitted into the hospitals of the Metropolitan Asylum Board came from all parts of London. He mentioned the case of a village near London—quite free from diphtheria—in which the construction of a new system of sewage was followed by a severe outbreak; he thought the disturbance of the soil might have led to the freeing of the germs. He said there was a strong ground for urging on Government the necessity for a systematic inquiry into the causes of the disease.

Dr. Schrevens, of Tournai, said the true origin and the cause of the spread of diphtheria could only be arrived at by examining carefully the results in different countries. In Belgium he had observed that diphtheria and typhoid fever ran concurrently—where one was severe, so was the other, and *vice versa*—but diagrams constructed from the statistical returns showed one exception, viz.: Eastern Flanders.

[1] Before the International Congress of Hygiene and Demography, London, August, 1891.

One was led to believe that the connection between these two diseases must be their origin from fecal matter, and the bacteriological researches of Loffler and Eberth agreed with this view. The exception in the case of Eastern Flanders also confirmed this, for the soil here was so humid that it was easily washed clean from all impurities.

Dr. Hewitt, of Minnesota, said diphtheria made its appearance in Minnesota about 1860, and was now the commonest cause of death but two, viz.: infantile diarrhœa and tuberculosis. Diphtheria started among the families settled on the banks of the great streams, and for some time remained a family disease; but later it spread to the higher plains, when the increasing business of the country led to increased intercourse. It was at first confused with ordinary tonsillitis and with scarlatina anginosa. Dr. Hewitt drew the following conclusions from the information he had been able to collect, viz.:

1. That from twenty to thirty years of age women were more liable than men—a fact which he accounted for by the contagiousness of the disease, and women being generally employed as nurses.

2. That forty-four per cent. of all cases occurred at or under five years of age.

Diphtheria in Massachusetts.—Dr. Abbott, of Boston, read an elaborate paper on this subject, at the close of which he drew the following conclusions:

1. That diphtheria is an eminently contagious disease.

2. That it is infectious not only by direct exposure of the sick to the well, but also through indirect media, such as clothing and other articles which have come in contact with the sick.

3. That the certainty of infection is not as great as in the case of some of the other infectious diseases, notably small pox and scarlet fever.

4. That overcrowding, faulty ventilation, and filthy condition of tenements favors its spread.

5. That the influence of defective plumbing is not proven.

6. That its transmission through public and private water-supplies is not proven.

7. That its propagation is favored by soil-moisture, damp cellars, and general dampness of houses.

8. That the poison may remain inactive in houses for a long period.

Dr. Adams, of Maidstone, presented a communication on "The Relationship Between the Occurrence of Diphtheria and the Movement af the Subsoil Water."

A Local Examination of the Difference in Susceptibility to Diphtheria Between Old and New Residents.—Mr. Charles Paget, of Salford, then read a paper with this title. As the result of his inquiries, Mr. Paget said he found that as the people of a district were more subjected to the continuous influence of their insanitary surroundings, they were found less fitted to resist the infection of this disease. A shorter average period of residence elapsed before an attack of diphtheria was observed where the mortality rate was highest, and *vice versa*. The relative incidence of diphtheria during an epidemic period, in respect of length of residence, was thus dependent to no small extent on general sanitary circumstances.

Prof. D'Espine, of Geneva, Dr. Jaussens, of Brussels, and Dr. Escherich, of Graz, continued the discussion, and the opinion was expressed that local disinfecting measures were of great use in preventing the spread of the disease.

Dr. Thursfield, of Shrewsbury, said that he had long ago arrived at the conclusion that the ordinary accepted ideas as to the etiology of the disease were one-sided and misleading. He believed that the failure of sanitary improvements to stop the increase of diphtheria was to be attributed to the dissemination of the disease by very mild, medically unattended, and therefore not notified, cases—generally acting through school agency. More importance should be attached to the fact that the chief influence favoring the incidence of the disease was personal susceptibility. He had, some years ago, in published papers, taken the view expressed by Dr. Hewitt, who laid considerable stress on the connection of the disease with damp houses. He had met with cases in which a very prolonged period of infection had been observed, and thought these might be explained by the fact that relapses might occur in diphtheria.

Dr. Tripe, of Hackney, said that, as the result of thirty-five years' experience, he had noticed that good drainage had but little effect in diminishing the virulence and extent of epidemics of diphtheria. The best method of preventing its spread was by destroying by fire all rags infected by secretions. He believed the disease was spread by contact, and had found that closing the play ground was as effective as closing the school.

Dr. Gunther, of Dresden, and Dr. Hubert also spoke, and a resolution was passed by the Section to the effect that it was extremely expedient that European governments should make a comprehensive and systematic inquiry into the causes of diphtheria.

LENNOX BROWNE confirms the statement of Couldrey as to the efficacy of sodium salicylate in the milder forms of diphtheria.—*Journal of Rhinology.*

DE RUELLE reports good results from the employment of the following in diphtheria:

℞.—Cyanide of mercury ..... gr. ¼
Alcohol at 80°. ..... ℥ij.
Distilled Water..... ℥vj.
M. S.—℥j every hour.

Improvement, manifest at once, is well established by the third day.—*Journal of Rhinology.*

IN DIPHTHERIA, locally, Marchand's peroxide of hydrogen and whiskey internally have established their value. A word in regard to the use of the peroxide: It should always be purchased in the smaller 4-ounce bottles, protected from the light by blue glass bottles and corked with rubber. That sold by the druggists from large bottles is, in the majority of cases, worthless. It is a very unstable article, and unless it causes immediately a white, foamy reaction when brought in contact with the false membrane, it should be discarded and another lot obtained. I am satisfied that I use it more freely and more persistently than most practitioners. I use mops made by twisting a sort of absorbent cotton upon sticks, using as many as thirty or forty in the twenty four hours. Such mops will take up nearly a half ounce apiece, and, when forced well back into the pharynx, reach all parts. The gagging and resistance of the child assists in the distribution of the fluid. As soon as a mop has been used it is committed to the fire. In this way I have treated the worst as well as the milder forms of diphtheria with complete success. I believe that the systematic use of definite, although often toxical doses, of whiskey even in children of tender age, are the surest safeguard against heart failure.

—Larabee, *Am. Pract. and News.*

NASAL DIPHTHERIA.—Nasal diphtheria has long been recognized as curable by local treatment, but not without it. The mucous tissue with its immense net of lymphatics must be constantly cleansed and disinfected. Thus absorption will be stopped, and the fearful cervical adenitis prevented or relieved, sometimes in a remarkably short time. In some cases, mainly those in which in the very beginning there is some bloody oozing from the nares, there is no lymphadenitis, because the poison is directly absorbed into the blood-vessels; in these cases also the favorable action of cleansing and disinfecting injections when commenced early is generally well established. I think it is now a recognized fact amongst us that nasal injections must be made early, frequently, and persistently. The greater the tendency to sleep the oftener is the child roused for injections. When the nostrils are obstructed by membrane, it becomes necessary to force a passage by means of a probe wrapped in cotton and dipped in carbolic acid, and keep it open. The liquids to be injected must be warm and fairly mild. Salt water (1.130), lime water, solutions of borax, boracic acid, benzoate of sodium, hyposulphite of sodium, bichloride of mercury (1.3,000–5,000) without or with chloride of sodium, sulpho carbolate of sodium, carbolic acid sometimes (1.200–500), and papayotin have been employed, once every half hour or every hour, in the night every two or three hours. We have learned at an early period that it is less cruel to wake a child from its stupor, than to let it die of sepsis. There are those who use salt water only, it having been their impression that the washing is of more actual effect than the use of disinfectants, with the exception of those cases in which the fœtor must be kept away from the lungs by desodorizers. For the purpose of washing the irrigator is generally avoided for fear of hurting the ear; we use small syringes with blunt and soft nozzles or sprays, the ends of which are covered with India rubber tubing, or spoons. It is acknowledged as a positive rule amongst all good practitioners, that no child must be taken out of bed for the purpose of injections, that the preparation, for the procedure must be made out of sight, and quickly but gently, in a recumbent or semi-recumbent posture. Soft ointments such as iodoform with glycerine ointment, are also applied by means of a brush.—A. Jacobi.

DIPHTHERIA.—The preventive treatment of diphtheria is a very important subject, and can not receive too careful consideration. If, as now seems certain, the Lœffler bacillus is the cause of the disease, and this bacillus finds lodgment in the great majority of cases in the fauces, it is reasonable to suppose that antiseptic washes used daily in the throats of those exposed to the disease will often prevent an attack. Sprays and gargles of boracic acid have been used for some time in several of the children's hospitals of New York, with the result of decreasing the number of cases of diphtheria. Complete isolation should be insisted on, the case placed in a room having good ventilation, and temperature kept as near 65° as possible. No unnecessary furniture should be retained, and the floor and walls should be washed with a solution of corrosive sublimate of a strength of 1 to 2,000, and all soiled clothes should be placed in a solution of the same, for which purpose the strength need not be more than 1 to 10,000. Privies, drains and utensils should also be disinfected with the solution.

The treatment of the disease naturally resolves itself into two kinds, local and constitutional.

Without discussing the innumerable remedies and specifics used by the profession, I shall content myself with giving the form of treatment I have seen used in the hospitals for contagious diseases in New York, and which I have used in my own practice with excellent results.

For the swelling of glands of the neck I apply flaxseed poultices, and have them changed every two hours. Spray the nose and throat every half hour, or as often as possible without exhausting the patient, with a 1–4,000 solution of bichloride of mercury, and after each spraying administer one to two teaspoonfuls of the following:

℞.—Potass. chlorat..... ℥vj ℈ij.
Tr. ferri chloridi..... ℥iiss.
Glycerini..... ℥vj.
Aquæ..... ℥iv.

Steam spray with five to ten drops of spirits of turpentine every hour. Instead of the spray of bichloride I have seen a glass syringe used with which three or four ounces of the solution of bichloride, 1 to 4,000 was injected, and though children from three to ten years of age swallowed over a quart in twenty-four hours, the only effect noticed was to cause them to vomit, no poisonous symptoms ever developing.

Whiskey is given according to indications, where the pulse is intermittent or shows signs of failing, an ounce every hour or oftener. For a tonic an elixir of iron, strychnine and quinine, and if the urine shows the presence of albumen, a diuretic of bitartrate of potash and gin; for suppression of urine, cupping and digitalis poultices.

When the false membrane involves the larynx and there is danger of suffocation, either tracheotomy or intubation is indicated.

—Buckley, *N. W. Lancet.*

COLCHICINE is rarely presented, but Dr. C. D. F. Phillips has furnished me with the following formula, which he has found useful in the treatment of gouty neuritis and allied affections:

℞.—Colchicine..... gr. 1–60.
Sulphate of quinine..... gr. i.
Extract of colocynth..... gr. i.
To make a pill, one to be taken three times a day.

—Murrell, *Hospital Gazette.*

CELASTRINE.—In seeking to compare the action of celastrine with that of drugs previously known, it must be admitted that its effects are similar to those of cocaine. Celastrine, however, is in so far the more energetic that it is mortal in amounts in which cocaine is merely excitant. It has, in common with cocaine, stimulation of the brain, augmentation of temperature, and deleterious effects, due to its abuse. It differs by its extremely bitter taste and by the fact that in intoxication from celastrine, sensibility is preserved to the last, that convulsions are lacking, and that, although the animals may experience more agitation, they retain the government of themselves, and the organs of vegetative life continue to perform their functions.

The stimulant effect of celastrine is essentially manifested upon the brain without leaving a trace of depression or visible disturbance of function. The prominent symptoms in the subjects of experiment were agitation and increase of temperature, which remained elevated even in the absence of movement. The spinal cord, vagi nerves, and heart may share the stimulant effect, but are less powerfully affected.

—Mosso, *Med. Press.*

AN EPIDEMIC OF TUBERCULOSIS. — M. Arthaud said that out of 35 workmen employed at the Electric Lighting Works in Paris he had found that 32 were phthisical, and of which latter number 23 had been affected since they had entered that workshop. He reminded his colleagues that he had already pointed out, in the Congress for the Study of Phthisis, the danger of tuberculous contamination in workshops when the sojourn exceeded a month.

—*Med. Press and Circular.*

AT the New York Polyclinic, a few days ago, Dr. Wyeth gave the history of a case of intussusception of the bowels that had come under his observation, and he endeavored to impress upon the physicians present the importance of early operation in such cases in order to save life. He said it reminded him of a history of Patrick Henry he had just been reading. Patrick Henry is supposed to have had intussusception. The attending physician purged him, without producing any effect. At last he brought in a large bottle of liquid mercury. When the patriot and statesman saw it he said his prayers, swallowed the dose of mercury, and promptly died. Surgical interference, Dr. Wyeth concluded, might have saved him. George Washington, who is said to have died of œdema of the glottis, might perhaps have had his life prolonged by any surgeon who was competent to open the larynx.—*Med. Age.*

TRANSFORMATION OF THE SMALL-POX VIRUS.—At the Académie de Médecine M. Chauveau read a long paper on the relations existing between small-pox and vaccine as regards the transformation of the virus. He said that the idea that vaccine was only a *transformation* of small-pox continued to obtain a large number of partisans. He, on the contrary, believed that the virus in both cases proceeded from the same origin. It was true the absolute proof was not yet established, but that they were distinct affections he did not doubt. Attempts were made by a Lyons committee to transform human small-pox into vaccine by inoculating cows, but the virus remained the same as to its nature even after several cultivations, consequently it must be accepted that the simple passage of pox virus in the organism of the cow or horse is entirely incapable of changing this virus into vaccine. Vaccine never produced small-pox in man, nor did human small-pox ever become vaccine when inoculated into animals. Vaccine is not, consequently, an attenuated small-pox.

DELIRIUM OF PNEUMONIA.—Castelain's observations lead him to the following conclusions:

1. The appearance of the delirium coincides with the beginning of the period of liquefaction, and is its first indication.

2. The curve of the delirium is parallel with the curve of liquefaction, and of the abundance of the exudation. The delirium increases during and after defervescence of the fever, in proportion as the râles become more moist and more numerous, and as they extend over a greater area. The delirium diminishes and disappears, little by little, in proportion as the fine râles become less numerous, occupy a less extensive area, and give place to coarser râles and finally to dry râles.

3. The duration of the delirium is in relation with that of the liquefaction of the great mass of the exudate. If the latter is liquefied rapidly and disappears immediately from the alveoli, the delirium is of short duration, but is more violent than when resolution occurs slowly or in different regions in succession. Delirium may even be entirely absent when liquefaction is slow, or the exudation slight.

—*Jour. Am. Med. Asso.*

TOBACCO AMAUROSIS.—The external appearance of the eye is normal; but now is presented the sphere in which the ophthalmoscope obtains its highest achievements; its revelations are uniform, distinct, and characteristic. In a typical case there is first, hyperæmia, congestion of the optic disc. This stage is rarely seen, for vision has not yet become so much impaired as to excite alarm. In the second stage, gray atrophy, the congestion has disappeared; the bifurcations of the central artery are diminished, and the temporal portions of the disc begin to assume a grayish hue. In the third stage, white atrophy, the vessels become few and attenuated, and the disc becomes of a whitish color; all the dioptric media are in no degree involved, retaining their transparency throughout.

The cause of failure of vision resides in impairment of the nervous structures of the elements of the optic nerve, near their entrance into the globe, in their course or at their manifold sources of origin. This is generally due to pressure exerted by the increase of the neurilemma of the optic nerve fibers within the unyielding optic nerve sheaths. At first it is a functional disease, but it becomes organic, if pressure continues for a sufficient time, until granular degeneration of the fibers has taken place.

—Dickinson, *Weekly Med. Review.*

SPURIOUS COXITIS OF A VERY TUBERCULAR CHARACTER.—A physician brought his son—a bright boy—from Texas. In correspondence he had reason to believe a violent case of coxitis in third stage and of tubercular origin, since there was no traumatic history. The doctor and his son took a room in St. Mary's Infirmary and examination took place, Dr. John W. Vaughan assisting, in the presence of a section of the senior class. Both in walking and on the table the patient presented the left limb in a bent position at both hip and knee, with increased inclination of pelvis and considerable lordosis of lumbar portion of spine. The extremity was not much lessened in size. These two circumstances rendered the diagnosis of coxitis problematic, although there was some swelling and excessive tenderness about the hip. Digital re-examination of pelvic cavity disclosed no deviation from the normal. It seemed as if there was deep-seated fluctuation about the hip, but upon deep incision nothing was found. Under chloroform there was no difficulty in extending the extremity, and to move it in any direction without any increased friction in the joint or contraction of muscles. The movement of the head of femur was perfect in the acetabulum. When fully extended and placed in plaster dressing with leather splints, the limb was both normal in position and length. These conditions disposed of the idea of coxitis and *tuberculosis.* The patient, the fourth day from proceedings rested perfectly comfortable and free from any disturbance. In a few days he will return home, with Thomas' splint to prevent any incidental motion of part concerned.—Bauer, *St. Louis Med. and Surg. Journal.*

SEVESTRE has latterly observed some examples of a special variety of stomatitis, which is characterized as follows:

It first affects, and often in an exclusive manner, the internal surface of the lips, sometimes, also, cer-

tain points of the buccal mucous membrane. It gives rise to white plaques of diphtheritic appearance, which are confused with the mucosa. It is generally cured in six or eight days, and presents no indication of gravity.

This stomatitis is especially observed in debilitated children, whose general nutrition is more or less defective. It is particularly frequent in occurrence at the end or during the course of measles and whooping-cough, but may be observed independently of these complaints.

It coincides frequently with chronic coryza, and especially with impetigo of the face.

This affection might be confounded with ulcero-membranous stomatitis, and especially with a manifestation of diphtheria.

Ulcero-membranous stomatitis is distinguished by its special localization (on the free edge of the gums, and the inter-maxilliary region of the cheek) and by the characteristic fœtidity of the breath. The diagnosis from diphtheria is more difficult, but there is a certain number of characters which lead to its distinction. Impetiginous stomatitis remains always localized on the buccal mucosa, without extending beyond the free edge of the palatine arch; this is scarcely ever the case with diphtheria. The eruption of the plaques occurs simultaneously, and the progressive invasion is not seen which characterizes diphtheria. Lastly, these plaques are intimately adherent to, and cannot be separated from, the mucous membrane without tearing it. A more peremptory reason for distinguishing diphtheriod stomatitis from diphtheria is found in the bacteriological examination. In all cases seen yet, Gaston and the author have found almost exclusively present the staphylococcus pyogenes aureus. This appears to demonstrate conclusively the nature of this variety of stomatitis. We may go further and ally this variety of stomatitis to impetigo. Cultures made with the products of impetigo have demonstrated the presence of the same micro-organism (the staphylococcus aureus).

—*Journal of Rhinology.*

Anæsthetics in Labor.—We sometimes hear enthusiasts declare they give anæsthetics in every stage of labor. Conservative men ask: "Why give anæsthetics in the first stage, or, at least, in the first half of the first stage, or the third stage at all?" If chloroform is administered early in labor, or about the middle of the first stage, it will, in a large majority of the cases, retard labor and thus prolong the suffering. Its effect upon the abdominal muscles is to lessen the contractile force, and thus retard the beginning of the second stage. My observation has been, if chloroform is given at all in the first stage in sufficient quantity to satisfy the patient, or control the pain through the first and second, a majority of such patients will have to be delivered with the forceps, for want of power to accomplish what nature would have accomplished if not interfered with; or that chloroform must be abandoned to allow nature to do her work. My practice, for years, has been not to give chloroform in the first stage of labor, unless there is abnormal or almost continual severe pain; in such cases, chloroform will not only lessen pain but cause longer intervals of rest, and allow nature to accomplish the work of dilatation, and thereby sooner be prepared to enter upon the second stage, pre eminently the most interesting and anxious period in the whole process of accouchment. I would give morphine or chloral where the pain is too severe or harassing, and dilatation slow—then wait. I am satisfied, by experience, that a too early use of chloroform insures a too frequent use of the forceps; yet I know the humanitarian cry will come: Use the forceps, then, and cut short the agonizing anguish and suspense. That, doubtless, would be well, all things being equal, when the forceps are in the hands of a skilful operator. But all physicians are not skilful operators, no more than all physicians are good surgeons; yet I am happy to believe there are more skilful physicians in both sexes to-day than in any other age of medical history. While, I repeat, my opinion is that a too free use of anæsthetics in labor calls for a more frequent use of the forceps, nevertheless, in this age of progress and civilization, with our delicately-organized and intellectually-refined American women, whose whole being tingles with delicate filaments of sensitive nerve fibers, which compel us to use whatever science has contributed to the relief of a suffering parturient, we must act. The time has gone by when an accoucheur can sit by the bedside of such a patient and indifferently listen to her cry for relief. He must afford her relief as readily as he would were she suffering with the toothache or any other bodily pain that is in his power to relieve.

—Hendrixson, *Columbus Med. Jour.*

Hip-joint Disease.—It is strange, yet nevertheless true, that orthopedists have not agreed upon the *exact* treatment of this disease. Some rely upon extension, others fixation alone, and some, considering the disease tubercular in the beginning, excise the joint. Whatever we may believe to be the correct method, the acme of our efforts is to check the inflammatory process, to maintain mobility, and prevent deformity. Thus, a few months since I was consulted with reference to a boy, aged nine years, who presented a marked deformity of the left limb, viz.: fixation of the caput femoris upon the rim of the acetabulum, extreme flexion of thigh upon pelvis, leg upon thigh, abduction, external rotation and compensatory lordosis of lumbar vertebræ. Examination determined anchylosis of hip-joint, and contraction of tensor vaginæ femoris. From the mother I learned that the patient had suffered from the usual symptoms of morbus coxæ, and had been under treatment in a hospital for a whole year with the stated result.

The extension method (adhesive strips, pulley and shot bag) had been applied. Whether this treatment was responsible for the result or not, I will not presume to say, though I must confess, that I cannot appreciate how fixation of the joint can be maintained by this plan. An effort must now be made to correct the deformity.—Bauer, *St. Louis Clinique.*

Lateral Curvature.—If the orthopedic surgeon was compelled to rely upon the numberless contrivances now in force, for the relief of rotary lateral curvature (scoliosis) of the spine, he would indeed be in a quandary. Their object and aim seems to be the correction of the lateral deflection from the vertical axis. Few of them have in view the correction of vertical rotation. In the majority of cases the latter is the potent problem which confronts us. A recent case of a girl eleven years of age demonstrated the advantage of relying upon manual manipulation as the most feasible corrective measure.

Wry-neck.—The cause of congenital wry-neck still remains one of the unsettled problems. Stromeyer's view, which has been generally adopted, that rupture of the sterno-cleido-mastoid occurred at birth,

is once more contradicted, and the opposition fortified by an exhaustive review by Ferdinand Peterson. The latter maintains the view, which he originally propounded, that congenital wry-neck occurred most frequently where there was a deficiency of amniotic fluid, and breech birth. His evidence seems to be reliable and convincing.

Medical News and Miscellany.

MILK is said to be a good dressing for burns.

WOMEN are much more tenacious of life than men.

DR. LEFFMANN has withdrawn his resignation as Port Physician.

WHITE of egg is said to be an efficient application for sore nipples.

DR. H. M. COX, of Easton, has been pardoned by Governor Pattison.

A HAVERFORD COLLEGE student died, this week, of cerebro-spinal fever.

DIPHTHERIA and scarlatina are said to be rife in the town of Harding, near Pittston, Pa.

CHOLERA is committing great ravages at Damascus and in Hodeida, a port of Southern Arabia.

CANADIAN trains are to be inspected at Detroit and Port Huron, to prevent small-pox importation.

IN France the law provides that the person who summons a doctor thereby makes himself liable for the fee.

MR. ROSE removed the Gasserian ganglion at King's College Hospital, October 29, before a large gathering of students and visitors.—*English Exchange.*

FRANCE is evidently no longer to be classed among the effete, since it is a republic. A Parisian woman has just given birth to an infant weighing twenty-three pounds.

JEFFERSON'S ALUMNI gave a dinner, last Tuesday evening, in honor of the election of Profs. Longstreth, Wilson, and Hau. Addresses were made by Weir Mitchell, Wm. Pepper, E. P. Davis, and others.

DR. FREDERICK states that he has never had a second case of scarlatina develop in a family when digitalis has been taken as a preventive. Many able practitioners credit this drug with specific virtues in scarlatina.

THE entries of students at the English medical schools foot up to 1,088 for the full curriculum, 117 dental, and 446 special course. Spite of the dirt, Guy's takes the lead with 161, while Firth College, at Sheffield, brings up the rear with a class of 16; not enough to be announced as "encouraging," by a prairie + roads school.

THE Board of Health has dismissed the protest of neighbors against the proposed annex to the Children's Homœopathic Hospital for contagious diseases. It may not be pleasant to have scarlatina and diphtheria for neighbors; but the inalienable rights of American citizenship remain, and they can move.

GELSEMIUM is said to be an efficient remedy for toothache; at least, for the non-inflammatory varieties. Fifteen minims of the tincture, with two grains of quinine, are given every hour for three doses if required.

AND NOW IT'S THE DRUGGISTS' TURN.—The *British Medical Journal* says that the Municipality of Seville has decided to establish two public pharmacies where poor patients may have prescriptions made up for nothing. The local druggists are up in arms against the proposal.

BETWEEN dictators, revolutions, and disease, Brazil is having an unhappy time. Ceara had 600 cases of small-pox on November 15; at Santos the hospitals were full of yellow fever patients, and 60,000 people had been lost by disease and emigration by Bahia, on account of drought.

A SIGN on a South Nineteenth street house reads:

EXPERIENCE NURSE.

For the sake of her patients, we trust that her knowledge of her profession is not so meager as her acquaintanceship with English.

THERE appears to be quite a serious misunderstanding between the *Lancet-Clinic* and a prominent Cincinnati physician, owing to an interview with the latter published in the *Times-Star* of that city, followed by another item of objectionable nature so closely that the two were supposed, on cursory examination, to be one article. No blood has yet been spilt, and we trust that none will be. The physician in question has considered the matter of sufficient moment to warrant him in clearing himself by an affidavit.

THE first number of *The Texas Sanitarian* lies on our table, Dr. T. J. Bennett is the editor. If this be a fair specimen of what the journal is to be, it is one that any State may be proud to own. But the editor strikes a terrible blow at individual freedom. He nullifies the glorious Declaration of Independence, when he strikes at man's most devoted retainer, the dog. "There is one sanitary evil, a source of great danger to human life and happiness—a standing menace to society, which, however, seems never to have occurred, either to our own sanitarians or our lawmakers—*the dog*." Never mind, Rover, old boy, we'll take our stand on your record as giving your life-blood to protect your master against tuberculosis; and if that be disproved, we'll die a little sooner, but hold fast to our dog.

APPLIES TO DOCTORS ALSO.—The druggists of the State of Colorado have held their second annual meeting, and again demonstrated the fact that they are looking after the professional as well as the trade aspects of their calling. There is one feature of their meeting to which we would like to direct the attention of the members of other local organizations. We refer to the number of papers describing drugs and chemicals indigenous to the locality of Colorado. If each State would take up this line of work we would soon have a fund of information added to the literature of American pharmacy, which would be appreciated the world over. The members of the American Pharmaceutical Association have done something in this direction by writing up local pharmacy in California when the association met there, and again describing local medicines in the South at the New Orleans meeting.—*Meyer Bros. Druggist.*

WEEKLY Report of Interments in Philadelphia, from November 14 to November 21, 1891:

CAUSES OF DEATH.	Adults.	Minors.	CAUSES OF DEATH.	Adults.	Minors.
Anæmia	2		Inflammation bladder	1	
Alcoholism	1		" brain	1	9
Apoplexy	14		" bronchi	6	9
Asphyxia		2	" kidneys	6	1
Bright's disease	19	1	" larynx		1
Burns and scalds	1	2	" liver	2	
Cancer	16		" lungs	28	12
Casualties	5		" pericardium	1	2
Cerebro-spinal meningitis		1	" peritoneum	4	
Congestion of the brain	1	2	" pharynx	1	
" " lungs	2		" s. & bowels	10	2
" " liver	1		Insanity	2	
Collapse of lungs		1	Mania a-potu	2	
Cholera infantum		3	Marasmus		14
Cirrhosis of the liver	3		Old age	14	
Consumption of the lungs	44	8	Œdema of glottis		1
" " throat	1		Paralysis	8	1
Convulsions		18	Pyæmia	1	2
Croup		11	Rheumatism	2	
Cyanosis		4	Shock	1	
Debility	5	3	Scrofula		1
Diphtheria	2	37	Sore mouth		1
Disease of the brain		1	Softening of the brain	2	
" " heart	25	6	Suppression urine	1	
" " liver	1		Suicide	3	
Effusion of the brain		1	Syphilis		1
Enlargement of the liver	2		Tabes Mesenterica		1
Fatty degeneration of the heart	4		Tetanus	1	
Fever, remittent	1		Tumor	1	
" scarlet	1	11	Uræmia	5	1
" typhoid	7		Whooping cough		3
Hemorrhage	1		Total	263	177
Inanition		3			

THE Canton of Basle, in Switzerland, has recently voted free medicine and medical attendance to every citizen with an income less than 12,000 francs ($2,400).

ONE of the most blatant and assuming of Philadelphia's many quacks lately made an amusing blunder in the English of his highly-colored advertisement. His purpose was to call attention to the huge figures following, relating to the number of his cures, and then to draw the proper deductions; but his clairvoyant knowledge of the mysteries of our tongue is evidently not commensurate with his ability to diagnose disease without looking at or speaking to the patient; for the advertisment runs: "Note the enormity of his experience, and doubt if you can the secret of his success."

THERE WAS URINE IN IT.—A dispensary patient, whose sufferings from gravel were partly real, but also hypochondriacal, came to the dispensary one day looking twice as lugubrious as usual, and told me that all the previous day he had been passing blood, water, and urine. "The way I know this," he continued, "is, because the night before last I was at my lodge, and while there passed some water in a cup. A young man from Blank Medical College, who happened to be there, looked at it and said there was urine in it. 'How do you know?' I asked. 'I smell it,' he answered."

THE following is told of the Professor of Surgery at Edinburgh: In the course of a clinical demonstration he turned to a student who had just commenced his studies, with the question: "Now, sir, can you tell me what is wrong with my dressing?"

The ingenious youth turned red, and preserved a discreet silence. Mr. Chiene, however, was not to be put off, and repeated the question.

After a long pause the youth stammered out in a fit of desperation: "Well, sir, if you insist on my telling you, I should say your tie is not quite straight."

As might be surmised, this unexpected answer quite "brought down the house."

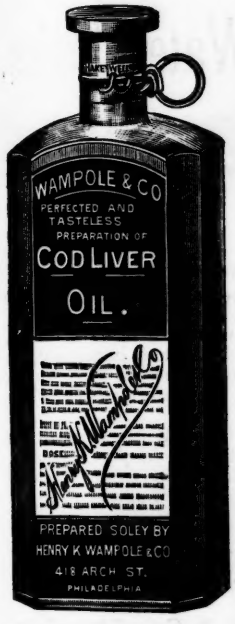
DUBOISIN AS A SEDATIVE AND HYPNOTIC.—Ostermayer regards the sulphate of duboisin as superior to hyoscine in not having the inconveniences of the latter drug. It is chiefly a hypnotic, producing sleep in from twenty to thirty minutes, and is to be given in doses varying from one to three milligrammes, according to the character of the case. It is said to produce no dangerous or disagreeable symptoms, and although continuous use produces tolerance, by leaving it off for a short time the full effect can be again obtained.

THE monthly meeting of the Camden, N. J., City Medical Society was held on Thursday evening, November 12, 1891, with Dr. H. F. Palm, the President, in the chair. After the transaction of routine business, which consisted of receiving propositions for membership from several physicians, and the consideration of the plan for opening of the new dispensary, which is to be completed next month, the more serious business of the evening was entered upon, which was the reading and discussion of Dr. Daniel Strock's paper on Diphtheria. The interest shown in this subject was evidenced by the animated discussion that ensued, in which nearly every member took part.

The following were present: Drs. H. Genet Taylor, D. Benjamin, A. M. Mecray, W. H. Iszard, W. Shaefer, G. T. Robinson, J. S. Baer, J. H. Frick, J. Osman, J. R. Ridge, A. McAllister, B. S. Lewis, E. L. B. Godfrey, S. Presley, N. Davis, E. P. Townsend, J. F. Leavitt, W. H. Ireland, J. H. Wills, O. B. Gross, O. W. Braymer, H. F. Palm, W. A. Davis, D. Strock, F. Haines, H. A. M. Smith, of Gloucester, and H. M. Sherk, of Cramer Hill.

There have been over 500 cases of diphtheria in Camden since November 1, 1890.

Wampole's Perfected and Tasteless Preparation of Cod-Liver Oil.



Combined with Extract of Malt, Fluid Extract of Wild Cherry Bark and Syrup Hypophosphites Compound (containing Lime, Soda, Potassium Iron, Manganese, Quinine, and Strychnia).

Containing the curative agents from 25 per cent. Pure Norwegian Cod-Liver Oil. Rendered pleasant and agreeable by the addition of choice Aromatics. For full directions, see circular surrounding bottle.

We invite your attention to the "fac simile" of an Analysis made by Charles M. Cresson, M.D., certifying to the value and efficacy of this Preparation, and which we have printed on the back of our circular.

NUTRITIVE. TONIC. STIMULANT.

Put up in 16-ounce bottles, full measure, $8.00 per dozen, net.

Put up in 5-pint bottles for convenience in dispensing, and as a regular stock bottle. 5-pint bottles, each $3.00, net.

Wampole's Concentrated Extract of Malt	$2.00 per doz.
" Syrup Hypophosphites Compound . . .	$3.50 per 5-pint bottle.
" " Hydriodic Acid	$8.00 per doz. in 1b. bottles.
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LAYS OF STUDENT LIFE.

On a frosty winter's evening,
As the twilight ends the day,
Blithely, to his room returning,
Steps the subject of my lay.

'Tis a student who this evening's
Filled with expectations bright;
For do not Miss Brighteyes' parents
Give their annual ball to-night?

As he walks, he's thinking gaily
How, ere many hours are o'er,
To sweet strains of merry music,
He will waltz with May once more.

They have met at several dances,
Sat out often on the stairs;
Often chanced to meet each other
When out walking—*unawares!*

As he walks, so gay and eager,
Through the streets of Camden Town,
Who would think his face, now beaming,
Soon will wear a troubled frown?

But a dreadful fate's awaiting
This poor luckless love-lorn wight;
Fate will—poor unlucky fellow—
Keep him from his dance to night.

For within his rooms, this evening,
Waits a note, to him addressed;
And, in which, his washerwoman
Thus her feelings has expressed:

"Three weeks' washing you are owing—
Sir, I trust my words don't hurt—
But, until my bill is settled,
I shall keep your clean dress shirt!"
—*Hospital Gazette.*

or

Carnrick's Kumyss Tablets

A PRODUCT OF PURE, SWEET MILK, PALATABLE, NUTRITIOUS, EASILY DIGESTED, AND WHEN DISSOLVED IN WATER FORMS A DELICIOUS EFFERVESCENT KUMYSS.

(*Put up in air-tight bottles, in two sizes; the larger holding sufficient Tablets for seven twelve-ounce bottles, and the smaller sufficient for three twelve-ounce bottles of Kumyss.*)

THIS PREPARATION is presented to the Medical Profession in the convenient form of Tablets, and will be found superior in every respect to ordinary *Kumyss*, *Wine of Milk*, *Fermented Milk*, or any similar preparation.

Kumysgen when prepared for use contains every constituent of a perfect Kumyss.

Kumysgen is made from fresh, sweet milk, and contains fully thirty per cent. of soluble casein, which is double the amount found in ordinary Kumyss preparations.

Kumysgen being in Tablet form, will keep indefinitely, is easily and readily prepared, less expensive than the ordinary variable and perishable Kumyss, and its *fermentative action* may be regulated at will, thus rendering it available at all times and under all circumstances.

Clinical tests gathered from every quarter of the globe attest its special value in all cases of *Gastric* and *Intestinal Indigestion* or *Dyspepsia*, *Pulmonary Consumption*, *Constipation*, *Gastric and Intestinal Catarrh*, *Fevers*, *Anæmia*, *Chlorosis*, *Rickets*, *Scrofula*, *Vomiting in Pregnancy*, *Bright's Disease*, *Intestinal Ailments of Infants*, *Cholera Infantum; for young children and for convalescents from all diseases.*

The casein being finely subdivided, it is especially valuable for all who require an easily digested or a partially digested Food.

Kumysgen is a delicious effervescent Food-Beverage, relished alike by the sick or well.

Kumysgen is tonic, stimulant, diuretic, highly nutritious, easily digested, perfectly palatable, and always *permanent* and *uniform* in strength.

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TONICS, ANTIPERIODICS, EXPECTORANTS.

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ESENCIA DE CALISAYA.

An agreeable, general tonic and stimulant, the equivalent of 40 grains Calisaya Bark in each ounce. As a palatable stimulant, antiperiodic and febrifuge, possessing all the medicinal virtues of Calisaya, it may be relied upon.

EMULSION OF COD LIVER OIL WITH HYPOPHOSPHITES.

This is the perfection of an emulsion, pure, fluid, palatable. Each fluid ounce contains: Cod Liver Oil, 4 fluid drachms; Hypophosphite of Lime, 8 grains; Hypophosphite of Soda, 4 grains; Gum Arabic Sugar, Glycerin, Water and Carminatives.

COCILLAÑA, GRINDELIA ROBUSTA, QUEBRACHO, CHEKAN, YERBA SANTA, LIPPIA MEXICANA, ANODYNE PINE EXPECTORANT, BRONCHIAL SEDATIVE, all have had their value proven in relieving respiratory affections.

Among Compressed Troches for Throat and Bronchial Trouble, we may mention Ammonium Muriate, Borax, Potassium Bicarbonate, Potassium Bromide, Potassium Chlorate, Potassium Chlorate and Ammonium Muriate, Potassium Chlorate and Borax, Sodium Bicarbonate, Soda Mint.

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